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# QL S.U.B.

THE MONTHLY PUBLICATION OF QL SUPER USER BUREAU

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# More Developments from S.U.B.

Membership is fairly modest at present of QL Super User Bureau, but we are very encouraged at the number of new users who contact us. We find that up to five or six users a week contact us who have never (ever) had a QL before. They have generally bought second hand from "Micro Computer Mart", or from a friend who has gone onto other things. Some are getting machines from their company when it goes IBM compatible.

## Trying to create QL news

We are still trying to push the news editors of a number of magazines to carry more about the QL or compatibles and also in some cases to carry full articles. Apparently in most cases the magazines never get press releases about the QL so they think its dead...

The most likely magazine is now "Micro Computer Mart" who have agreed to do a QL feature. We will be contributing the article, and we hope that if it is successful, it will become a regular QL column. Of course we will not be writing it- we are busy enough writing for "QL SUB" and trying to keep things moving- one thing and another, there seems to be serious shortage of time. The magazine has already had offers of articles from several well known QL software writers, and journalists.

Computer Shopper has also been making quite a good attempt at covering the QL market- they have asked for contact from QL user groups and users, but I have not been able to get in touch with them so far- I think a couple of anonymous phonecalls may have been from somebody at Computer Shopper as some comments I made to one of them about our organisation were printed last month in a rather garbled form. I hope that Computer Shopper keeps up the good work, as a back up to "QLW".

## Helping QLs live on Prestel

Another area where we hope to do some good for the QL market is Prestel. The editors of "QNet2", (the QL area on Prestel), are unfortunately too busy to keep regular updates going. We may be able to keep the QL section alive, and we will soon become editors for the Clubspot 810 section on Prestel.

As you will gather from the "Protocol Converter" this month, the world of QL comms and electronic mail is certainly "buzzing". The QL boards that are a hive of activity are now growing in numbers, and users, as more and more QL users start using electronic comms.

The new QL bulletin board software that we will be using, "QUIEU" from the sysops of Atavachron and Lau's Place, seems set to be very popular, and it looks as though a number of QL software houses will be setting up online services similar to what we have always intended to offer you.

## More QL news? Your ideas?

If you have any ideas how we can do more good for the QL market, (within our limited resources,) then please let us know. At present we are very much over-stretched, (as I explain,) and so it may be some time before we can take up your suggestions, but the plan is to promote the QL any way we can. We are waiting for your ideas...

## Increasing helpers at last!

Finally, a note about our the club. We are now looking for some employees to help us handle the ever increasing workload. The trouble is that we are still waiting for our offices at the new business centre to be complete. (We booked them for the end of March, but unfortunately their schedules are being disrupted too.) We cannot take anyone on until we get them, due to the "health and safety" regulations. Apparently, our office does not have enough room for even three people! It really is frustrating to want to take someone on, but to be prevented from doing so by red tape. Rules are rules.

We really are sorry about any delays you may have suffered so far. We will eliminate them as soon as we are can, which should be quite soon with any luck. We are hoping to be moving into temporary offices in the business centre soon while ours are being done. This will mean that we can finally arrange to have more help available.

## Mixed "QL SUB" news again-

Once again, we have to close reporting problems and delays and the reasons. We very much hope that at the end of the editorial in the next issue, we will be able to report that everything is back on schedule and that you will be getting the subsequent issue soon. It seems that the QL market is getting more busy by the day, and as more and more new products become available, our job of selecting what to feature and what not to feature is getting more difficult. Your faith in all our efforts to deliver a better service is gratefully acknowledged- and we will.

# "EDIT", An Extended Editorial

Well, here is issue two. We hope that this one is as interesting, if not more interesting than zero and one... The quality of "QL S.U.B." will be improving even more for next issue, we hope, because we have now got an Epson laser printer on lease. (By the way, the magazine is printed, not photocopied or laserprinted.) We only print the first camera ready copy- from that point onwards, it is up to the printer (hello Rod!) who may even remember to put his reputation on the line by printing his name on the back cover. Also, the magazine is now hand folded by us. Every copy has been collated, folded, stapled, and despatched, by Julie, her mum, or myself! Personal attention from "Super User Bureau". Even Julie's mum helps us. Thankyou!

## New Features in this copy

We have some interesting new features in this mag. We have a new adventure column from "QL Adventurers Forum", written by Richard Alexander. We are both involved in QL publishing, in one way or another, so it is good to be able to cooperate for the common good. If you like the article and would like more information about "QLAF", then you will find its details there too.

If anyone else out there would like to write, or contribute an article, then please let us know. You don't have to be a journalist- if you think you have something interesting to say, whether it is for beginners or experts, please tell us. (Sorry, we can't pay though.) We much prefer your constructive news and articles about the QL though- an offer of information about features that are not on the QL, but would have been nice is not really relevant. What we want is information on how to do things and not on what cannot be done.

## All the "QL World" revealed

Our plans to get in contact with user groups across the world, (and the UK of course too,) are well in hand. We are waiting for correspondence from groups in Norway, Sweden, Denmark, Belgium, France, Spain, and Holland. We are also hoping to contact the QL and Sinclair user group in Australia.

If you are in a QL user group, (other than QUANTA or QLAF who are already mentioned,) then please let us know, and we will print your club details. We will be most happy to help you set up a new local user group if we can, or to help you get a few more members by publicising your QL activities.

On the subject of contact and help, we would like to thank Peter Chambers for his cooperation this issue, in that he has kindly agreed to be interviewed. He has some VERY strong views on QL/PC computing, and we hope that many other people will be as helpful in future.

We hope to have words of wisdom from another industry figure with something to say about the QL market next month. We will not accept promotional chatter or material spiced with undercover promotion, or gloss, about any company that is associated to the person. We want comment, not advertising, here.

## Programming Features soon

Our plans to include some programming courses are still on course- we have had one or two offers of help in these areas, and we will be getting them off the ground just as soon as we can. The courses may take the form of magazine supplements for those interested, or we may be running them as mdv and disc examples together with tutorial files.

We will be continuing to develop the Archive name and address program that we first started in last months issue in future issues. You will notice that we have included some interesting new features in the program in this issue. Our policy to listings in the magazine is to develop useful short programs that will save you money, or will fill a gap in the market as far as we can. This will mean that longer versions of programs, or fuller versions will be available through the SUB PD library.

## "Public Domain" not growing

Remember that any program we list in the magazine is available in a refined form from the public domain library. The charge for programs listed in the magazine is only £1, plus the disc or microdrive- or £2.50 including disc.

We are sad to say that the public domain library is far from buoyant. We have had very few submissions, and it is a pity to have to say that there is so little interest in something that is so popular on the ST and Amiga. On those machines everyone seems to want to donate programs to libraries, and the quality is high, and list huge...

## We want to hear from YOU!

If you have any ideas for new features in the magazine, or new services that we can offer, please let us know soon!

# THE NEWS DESK

News comes pouring in to the "QL SUB" office almost too fast to deal with. The number of new products from those QL dedicated companies seems to be very encouraging, and of course with the CST "Thor 16" reaching customers in increasing numbers, more and more companies are identifying the "Thor" as being an important market to hit. Adverts are now regularly appearing that say "Now CST Thor Compatible".

Gap Software who are covered in this issue with a review of "Front Page", and an interview with the boss, Peter Chambers, are probably the most committed to the "Thor 16", in that most of their software is now not only "Thor" compatible, but actually requires one to run at all. They are still willing to supply QL versions, but will develop future programs with only the Thor in mind—you could then run the program on an expanded QL with the Qjump POINTER environment.

Another company that is likely to be pushing the "Thor" in particular is "Thornado", a new company, based in West Germany, and proposing to offer similar services to "QL SUB". You will be pleased to know that it is very likely that we will be working together in future, and sharing our resources, rather than competing...

## CST "THOR" BECOMING FAMOUS

Most of the products here are "Thor" compatible infact, and if CST are not over stating the machines success, that is hardly surprising as they tell us that almost a thousand "Thor 16" machines are on order, with many of the orders now being supplied. The "old" Thor that we have featured this month may well become cheaper as a second hand system, as many of the people who have bought them will want to upgrade to an even better system. It is likely that CST and a couple of other companies will be offering the old "Thor" as reconditioned units.

We have to say that we find some of the praise made about the new "Thor" series to be quite astonishing. CST have not yet sent us a machine to try and so although we have been offered dealership of the product series, we will be reserving judgement, and will not be supplying any until we have been able to give a review machine a thorough review during heavy use.

Judging by the proportion of "Thor" users to QL users, the machine has been given a significance far greater than it merits. We would love to know how many of you are considering a 16.

For those of you who are happy with you QLS at present, but would like more speed, and more memory, (even that a Trump Card,) then there may be salvation on West German horizon.

The Mega-RAM from "ABC Electronik" is supposed to be available now, (so makes it to the news section,) and offers the QL user the ultimate upgrade. Fitting inside the QL, it upgrades the hard worked 68008 by replacing it with another 68008. Eh?

Well, yes, but the new version is a special one that can address 4096k instead of only 1024k. It also offers a Megabyte (1024k) of dynamic RAM as standard, and uses zero wait states, (very fast for the non-technical) and can be upgraded even in the standard QL case to 2048k. By putting your whole QL system in another box you can expand it up to 3072k. Either way you can also have extra RAM from an expansion card like the SuperBoard!

## Sandy gets more -POWER-

Another QL hardware company, Sandy UK, has changed its name, and is now trading as Power Computing. In theory they still offer the same range of products, and the same staff still man the phone, but don't be surprised if you contact them for some reason, mention Sandy, and they deny being anything to do with it. Politics...?

## MIRACLES becoming costly.

Miracle Systems are still developing their range of products—the ever popular Expanderam, which upgrades the QL by 512k with the option of upgrading to disks or other extras has been fluctuating in price wildly, and there are likely to be some new prices on their other products including the Trump Card and Midi. We think that with the RAM chip prices going up, there is likely to be a rise in the price of the Expanderam.

## Software Developments...

On the software front, there are a large number of interesting new items either available now, or available in the (very) near future. The hardware scene is lively, but it will never match the software side of things for pace. The new products, however, are certainly much more important to the long term future, as if you can get a wide range of expansions, then you have a confident future. If you are left with do-it-yourself projects, and you have to piece bits together, you cannot have confidence at all.

## POINTERing at the future?

QJump have released a new toolkit called the Pointer Toolkit that lets you develop your own programs in such a way that they can make use of the whole POINTER environment, and the window manager. This will allow you to program sprites, icons, pull-down and pop-up menus, and much more from interpreted SuperBASIC, (or compiled with Liberation Software QLiberator-not Turbo, as that cannot pass and return arrays to other routines,) or machine code, or other languages that can deal with the complicated filling of array tables, and 68000 registers.

If you are not a programming "boffin" you will probably find the toolkit very hard going, especially if you are not programming from SuperBASIC. The manual is comprehensive, however.

We intend to run a full feature on the POINTER real windowing system in the next issue, in "Investigation", as it offers similar features to the Thor's windowing system, but with nice extras that make the system more like an Amiga, and very versatile.

## Speedscreen- Slowest Help

Creative Codeworks seems to have gone into a different dimension. One day they were here, the next day nothing. Simon Goodwin is apparently so busy writing articles that he does not have the time to do Quickfax, so the product is either on hold or dropped. Speedscreen is now not on our list anymore because contrary to promises, updates and bug-fixes have stopped. This is very annoying, and we hope that it is just a temporary problem.

## Flashback vs. Quickfax???

Incidentally, Flashback from Sector seems to have hit a brick wall. The planned language developments and the much requested reports module have both failed to materialise. It seems that Archive is the king once again. Sector has been busy in a number of areas too. Page Designer 2 is now available in yet another updated form although it is still Page Designer 2.

## MIDI interface- No ESCAPE

Last issue we reported that the new Midi-Interface from Miracle Systems was ready for sale, and that a hold up in availability was a result of the failure of "Escape Software" to finish their QL Composer package in time. Since then, Escape seems to have gone missing... It seems that the pressure of trying to finish it must have driven the author to become a hermit. Miracle claim that they know nothing about it, and have made another package available. It seems that the

new package has a few flaws in it, as a member has been trying out our review version, and chatting to the authors at regular intervals as his software and QL keep hanging-up when running it. We shall also be looking at the whole midi hardware and software package in more detail.

## Best Software Yet to Come

A number of new companies are likely to join the market over the coming autumn and Christmas months as usual. There are usually an influx of games and utilities in the autumn- from what "QL World" tells me, the adverts are already rolling in for new items.

It looks as though the newsdesk will be piled high once again, and that we will be busy answering your questions about new products, finding bugs (and cures,) and reviewing the software. The hardware area is certainly more prone to rumours about new products, but in practice few actually appear.

## Review Copies Very Costly

Although there are loads of packages to review, we have to comment that there are very few companies today who are kind enough to send copies of their latest masterpieces for review- even on loan- but they still expect us to be able to review their titles. Software 87 are a notable exception! (Most expect us to buy a few copies of any package, and to review stock.) In practice, that is not possible.

The other moan at QL software, and hardware suppliers is that they don't tell us anything- even though it is in their interest to do so. We have even offered to send out news on the latest products to all the magazines who might mention them, if they sent us one copy, but still none arrive! Surely it is worth 5 minutes time to photocopy and send brief details out?

## QL at Death's Door AGAIN?

According to (some) other commentators in the QL market the QL is at death's door. We are perplexed. We have never been busier, a fact that you may be aware of if you have been waiting for this copy of "QL SUB" for some time. We get regular contacts from people who have never had a QL before, and from users who have converted BACK to the QL from other machines, including the Commodore Amiga and Atari ST...

## A firm future GUARANTEED.

Don't believe all you hear about the death of the QL. I think that it was George Washington who anticipated the words of a QL equipped with a "QTalk" unit when he said, "The Reports of my death have been greatly exaggerated!" Whatever happens we are here to help.

# DEVELOPMENT HIT

The QL market has always been one where companies are so secretive about their plans, rumour and gossip thrive. One could be forgiven for thinking that there has been more gossip, and less action than there should have been. The present market situation where power is becoming limited to a range of big companies is promoting this situation - if QL companies bothered to send out some brief press releases instead of just announcing products in adverts, the whole market might well benefit...

## Sad Queue for MegaBoard

The RAM chip shortage is affecting several projects - Sandy, ahem, Power Computing claims to be holding back their MegaBoard because of the RAM prices, but other sources claim that the design is fundamentally flawed. The whole future of Power Computing in the QL market is doubtful. One of the omens is that their disc drives are now supplied in Amiga/Atari Grey and the usual smart black drives are no longer produced. Even the range of SuperBoards is not 100% guaranteed.

## MIRACLE claim a Trump Card

Miracle have told us that even if Power do get their act together, they are going to keep the upper hand, as they have an astonishing add-on for the autumn/winter period. That will apparently be popular even with the "Trump Card" owners who think that they have everything they will need!

## International Imports Popular

There are a number of products that are available in Germany that are not presently available in the UK. Moves are presently underway to ensure that they reach a wider market than now, and it is likely that companies will be importing a range of both items.

Some of the companies with products that may be of interest are Jochen Herz Software who offer a range of QL games and serious applications to use with the POINTER environment. There is also Ultrasoft who offer products which include the QKick program that pops-up in any application. As the QL market thins out, (loses dead wood?) it is spreading out to include some companies who were previously almost local concerns. Certainly, distance can have its problems. Although we are able to order from Spem in Italy, delivery times are pot luck, and it seems that the QTalk unit that Strong are importing is suffering from very long delivery times from New Zealand.

There are some rumours going round that seem to be nothing but rumours. We are told that there is an IBM compatible expansion card that is to be available by "late summer"! It is apparently so superb that it will run IBM software on the QL faster than an IBM AT. Judging from probing at the source, it is more fantasy than fact, but lots of people seem to believe... There is also a strong rumour that an IBM emulator is under development, although sources are a bit confused as to who could be responsible. It looks as though it's the West Germans.

## Even More from Digital Now

Digital Precision are making sure that they get a regular mention by bringing out lots of new surprise products. (No, they don't tell us first - we only find out when we get the next advert and read about it.) The desktop publisher that we guessed was on its way will be launched soon, although we expect that the price will be pushed up higher again from that of Special Desktop Publisher. We would like to see a less expensive upgrade method for existing DP users.

Digital Precision claim that prices are low for development investment. In view of the small sales that QL products traditionally attract, this is probably correct. However, the 1st version of any product is never the last version with DP. We are told that almost every product is now going to have an upgrade. What about a Very Special Editor, and the Very Special Desktop Publisher and so on.

## "Big Boys" taking QLS Over?

Looking around the QL market today, it looks as though the market is more and more dominated by a few big firms and that the little companies are either dropping out, or being taken over. Transform, Eidersoft QL, and Pyramid are all more or less the same, although they would disagree. (Pyramid used to be a French firm.) TK Computerware and Talent+ are also the same company for trade orders.

Digital Precision is providing a huge range of QL software and many of the products have come to dominate or replace ones that used to be their competition. Sector Software is also looking more active (and powerful,) lately, although perhaps the product range is less substantial than their adverts would suggest. I am sure that they have a whole range of products in the QL side-lines to address this "problem", and increase QL support.

# Write to Reply

Dear SUB,

I am interested in upgrading my QL to expanded memory and disc drives. I'd been thinking about the Trump Card, but following your review in issue 1, I am a little confused about expansion. You say that you cannot add anything else onto the QL if you plug in Trump Cards, but I am told elsewhere that it works with the ICE system and mouse that I own. Also, if I plug in a pair of dual disc drives, can I still use all my software on microdrive? I have lots of data on microdrive, and I do not want to have to type it all in again. Help!

*Ed, Well I am sorry that my review of the Trump Card has caused you more confusion. What I meant was that logically the Trump Card occupies all expansion space EXCEPT the Rom slot. You can therefore still plug in your ICE ROM and mouse, although I think that you may find it quite limiting if you are using a Trump Card and a pair of dual drives. (Incidentally we made a mistake when we said that the Trump Card can control 4 drives, it can only control 2 at any one time.) The use of disc drives does not stop you using your microdrives. You can simply copy files from microdrive to disc, and vice versa. You can still run programs off microdrive if you wish, although you can copy most programs from microdrive onto disc, and set them up to make us of it. Some programs are "badly behaved" or include "piracy" protection, and will not therefore run from discs.*

*Of course, if you are still in doubt about using disc drives, or you've bought them elsewhere and are in difficulty setting your programs up to use disc, please ask us for help*

*Still no letters that actually state for "WRITE TO REPLY." In future we may print your letter UNLESS you say don't.*

Dear SUB,

Why isn't "QL SUB" monthly?

*Ed, It isn't for want of trying. We hope that it will be monthly soon, but up to now we have had so many let downs, that we have been just keeping all your problems in order. We all want it to be monthly so that you can get more information at regular intervals. It will be.*

Dear SUB,

When do you expect to start laser printing "QL SUB"? Also do you offer any service for those of us without lasers?

*Ed, Soon. See this very issue for a glance at how we hope a laser printed magazine will be. We can laser print your own documents, and there are some companies who specialise in it.*

Dear SUB,

I am interested in buying some software, (Ed, Various Titles!) but I am not sure about how to do so. Do I order from the company, or from you direct to claim my discount? You have sent me no price list, and I am reluctant to order direct and miss out on any SUB saving.

*Ed, Please, anyone who hasn't received a price list and a list of savings from us, tell us. We offer savings if you buy from us only, and we need all your support. (Lists free to members)*

# Write to Reply

Dear SUB,

I will write letters to "WRITE TO REPLY" when you use a typeface I can read.

*Ed, Is this better? Comments please...*

Dear SUB,

I note that you are now offering some public domain software for the QL. I've expanded my machine, but I still have difficulty in setting up software if it is not supplied with a suitable program to integrate it with my existing ones. Could you perhaps write and submit a range of boot programs that are all ready to use and will save us (users) from having to go through the hassle. Perhaps these could be offered with a range of other useful hints'n'tips for using the program on a single disc or microdrive. I am sure it would help us.

*Ed, No sooner said than started. We'll try and get a collection under way. I hope that the simple boot program for users with disc drives that is in this issue will get things rolling. Maybe as there are so many combinations, some of our readers will send in their own solutions for distribution, along with some hints and tips. Combinations in particular could be for Taskmaster, GRAM, and Taskswopper, and for disc drives without expanded memory. All that is needed (and could be allowed) would be the basic boot, with names of appropriate files, but not the files themselves. Also, we have had some mention of "front ends" this issue, but maybe your program is easier...?*

*Other popular combinations seem to cause confusion. GRAM, QTYP, Task Master, Flashback and Spellbound. I also get asked about the Editor and using other Turbo Toolkit programs.*

*Again this issue we haven't had any letters that we can put names to. These are all real letters, but the authors did not address them to this page. PLEASE write in to us!*

Dear SUB,

I know that you sell "things" for the QL and "Thor". How do you claim to be independent if you also sell companies' items? I want to trust your reviews.

*Ed, Yes we do sell "things". We are independent because if you ask us for advice or opinion on a product, then we will tell you what we think, NOT what we think it is safe to say, so as not to scare off adverts. I give you my word. We do not EVER give you an opinion just to try and persuade you to buy something from us. If we did, then you would soon find out that we had, and wouldn't trust us again for anything... As we need your support, it would be stupid of us to do so.*

Dear SUB,

I work for a company that has a range of IBM equipment. Can you help us with supplies?

*Ed, If necessary. We could get you anything you need for an IBM, but we specialise in QLs ONLY. We do not want to be a Jack of all trades, master of none. The QL and Thor aren't just a side line, they are our speciality. We will be pleased to help you, and can supply you as members with significant IBM compatible products, but ONLY if you ask us to do so first. We can supply most major brands. Ugh.*



# A QLiberator Budget

Liberation Software is best known for its SuperBASIC compiler, QLiberator. The compiler was first launched in October 1986, interestingly, reviewed with Supercharge, in "QL World", in the same issue as the first advert.

## What does a compiler do?

A compiler is a program that takes a program written in a chosen high-level programming language and puts it into a form that the computer can act on directly, and therefore much faster.

The program was to have been included on the ROM of the Sandy "Futura" the "mythical" computer system from Sandy that never was. QLiberator, on ROM, was chosen because of its virtually 100% compatibility with SuperBASIC. Development with other software from the "Futura" project has continued, and Liberation claim it is used by Qjump, and is completely compatible with the latest POINTER system, and the Qjump/Sandy mouse interfaces.

Since launch, there have been several revisions, and the latest version is now 3.22. For some time, the original version has been available at £29.95, as the QLiberator Budget, the choice for users who don't need the power of "Qlib 3+" or are working to a budget.

We will be taking a look at 3.22, the latest version, in a future edition. We will also be looking closely at Turbo, the heavily promoted follow up to Supercharge, and seeing if either is really worth the extra money. There was a long-running feud between Digital Precision and Liberation over the two compilers- the cause being a dispute over whether QLiberator is a compiler or not. Technically it isn't but the difference is immaterial as it make any program run much faster which is what a user wants it to do.

## Impressions are promising

First impressions are promising. The package is supplied on either disk or microdrive, and comes with a 92 page A5 manual that covers both the budget and 3.22 versions, and includes an explanation of the extra commands and options available, and an index, but "reads" much shorter. A small manual indicates to me that a package is either very easy to use, or poorly documented. A large manual indicates to me that a package is either very powerful, or incredibly complicated. In this case it is the former, and is very easy to use and well documented- we will see how powerful it is next.

The program is not copy protected, and can quickly be installed on disk, or hard disk, and will run from your microdrives on a standard machine. It works with all versions of the QL ROM including the earliest ones, AHS, MGs and even the non-standard MG-UK ROM.

When loaded, you are informed that the QLiberator run-times are present, and then dropped back into SuperBASIC so that you can load up, or write any program or programs that you might wish to transform with QLiberator. The compiler has compiled itself, and it is an excellent example of what a well written program can achieve.

The compiler itself is not usually loaded into memory. (You can choose to load the 3 series QLiberator into RAM and initialise it as a keyword extension, or can even blow it onto EPROM, which offers maximum power.)

You call the compiler up by typing "liberate filename", with a comma at the end if you want the compiler to run straight through and produce some code at the end automatically. The first stage produces a work file on the specified medium. This is the QL SuperBASIC program in internal format and is the same as Qload/Qsave files. It is the internally tokenised form of your program, and this makes the processing somewhat easier and faster to achieve. If you omit the comma at the end, this is all that's produced.

## Getting down to some work

For the important stage, the compiler itself is loaded, and your program is checked for mistakes, offering you warnings about bad programming that could result in the program crashing. This is done very quickly on small programs, although you still see the line numbers clocking up in a box at the top right of the compiler screen. A second pass is carried out often so quickly you do not notice it- the box containing the line no is not updated and there is no distinct code pass in QLiberator, unlike for Supercharge.

SuperCharge compiles in two stages, looking noticeably quicker, although the actual time taken to compile is usually about the same. As QLiberator compiles at the same time as your other jobs are running, (for example SuperBASIC,) it can take a very long time, especially if there is other "heavy" processing going on- but this is to be expected, and the same applies to any compiler, and cannot be overcome if it uses multi-tasking.

## Compatibility- A Trade-Off?

Now having explained how QLiberator works, we can now find out how well it performs. We don't consider the speed of code produced to be the only thing to consider when rating performance. The ability of the program to compile your program without rejecting or misinterpreting any statements is vital- compilers should support the features of the language specified, not a variation that can be handled.

## Unexpanded QL is Enough

QLiberator can compile large programs even on the unexpanded QL, and as the code that is produced is usually very compact, you should not find problems associated with lack of RAM or disks.

The code may be very compact, but it is important to remember that there is also the overhead of the runtime system that is required for any file. It is around 8k on a budget. It needs to be either linked with the program or loaded in as a resident extension.

The advantage of having the run-times linked in with the QLib program is not having to kill off all jobs, and load them in before using the program, or booting from reset. The advantage of having the run-times separate is that you need only load the one 8k file, no matter how many programs use it.

You can also link-in any machine code routines, either keywords, or CALLED. In addition, you can allocate common heap instead of resident procedure space automatically. This means that any SuperBASIC program that uses the x=RESPR(bytes) will compile and will run without the problems of BASIC.

There are a number of useful commands available from the supplied extension file, suitable to set-up pipes, (for inter-job communication,) control the jobs running, and enable the cursor, as well as to control the compiler. There are several other commands for use with the compiler, and these take the form of pseudo commands that are written in REM statements. These take the form REM \$\$asmb=flpl\_extras\_ext, 0,12 which in this case links in a file of extras into the QLib program. QLiberator is the only SuperBASIC compiler that supports Qjump POINTER environment, both DP SuperCharge and "Turbo" do not support the return of altered parameters from a procedure.

## Providing Error-Trapping

The next area that makes QLiberator a little special is that of errors that occur while a program is running. The specified QL method on JS and MG ROMs

is that of the WHEN ERROR .. END WHEN construction, but this cannot be used on previous ROMs- the problem is that the commands were not implemented.

QLiberator overcomes this problem with a new command, Q\_ERR\_ON, and the complementary command, Q\_ERR\_OFF. There is also a function that is able to return an error code- Q\_ERR. The idea of these keywords is that you add commands and functions to the error trapped list, and when you call the keyword, if there is a problem, you can deal with it by checking the Q\_ERR function, using your own code.

If you leave out any use of these commands then QLiberator displays an error window with a prompt to try the operation again, if your program "goes wrong". This is ideal to trap errors of the "file not found" or "bad or changed medium" variety, as well as errors at input prompts etc.- but a "NO" makes the program abort.

## Our Conclusion- A Quandary

QLiberator can certainly beat both SuperCharge or Turbo on compatibility with SuperBASIC, compiling nearly all code that it is asked to. Results are usually as expected, but your program may crash when you run it because it is badly written- that is something that QLiberator can do nothing about, without appearing rather fussy about code it will compile without errors.

On Speed, "QLiberator" is out-classed very significantly, both SuperCharge and Turbo out-performing it on some operations by several times. Even the newer, and reportedly faster 3 series compiler is nowhere near as fast. We think actions speak louder than words- we have some demo programs for both Turbo and SuperCharge vs. both the QLiberators, so you can judge the real speed increases for yourself. (Send two 19p stamps and a blank disk/mdv.)

Claims for dramatic speed increases of hundreds of times are misleading when applied to any compiler- your programs will run faster but how much is very dependent on what you program is doing- benchmarks are irrelevant. If you are looking at a compiler to obtain a specified speed increase you may be disappointed. First you should look at your algorithm, and then at the language- no compiler can produce fast code from inefficient listings.

QLiberator is a good investment for anyone who wants their programs to be faster, and to multi-task, without the hassle of "tuning" their programs to work with it. However, you may be better off looking at SuperCharge or Turbo if speed is your objective. In commercial products, Turbo is no. 1, but QLiberator is catching up fast...



# FRONT PAGE



One of the most popular uses of the QL at the moment is for desk top publishing. Last issue we looked at Page Designer 2. It is aimed at QL users with at least 384k of memory, and disk drives. There are presently six packages for the QL for this purpose, and there are more on their way...

What started this sudden urge on the part of QL users to do desk-top publishing? Well, apart from the inability of Quill to merge text and graphics together, and the limitations of using paper and pen for creating posters and adverts, one company is largely responsible for starting it.

Gap Software released the "Front Page" program for the unexpanded QL with several aims in mind. It was their first program to be released for the QL, but rarely has a debut piece met with such popularity. The five aims of the package were, according to the "Gap" manual to produce software that should do the following-

- 1- "run on an unexpanded, unmodified QL."
- 2- "be easy to use for the non-expert."
- 3- "do as much as possible of what you might expect."
- 4- "be difficult to lose several hours work."
- 5- "be cheap."

We will be looking at the basic system to find out as to what extent the standard "Front Page" program satisfies these demands.

The program is written in basic and compiled with the Liberation Software "QLiberator" compiler. It was in fact, the first product to be commercially available to use QLiberator, and stresses it! Interestingly, each competitor is written in basic and compiled with the DP "Turbo" compiler.

The most significant difference from the point of view of the QL user looking for a package to design leaflets and promotional material with, between the other programs and Gap's "Front Page", is that you need no extras to run FP, ("Front Page"). In fact, the whole "Front Page" series up to "Front Page" Extra/3 are very modest in demands on the QL.

You do need a dot-matrix printer to print your work on - come to think of it, you can always ask

us to print your pages, or get a friend with a printer to let you print your pages on their's...! It certainly wins on point one.

"Front Page" is supplied on just one microdrive cartridge, with a printed manual that starts by explaining what you should be able to do with your QL and the package, some ideas on what you can do with it, and an outline of the limitations. Although it is brief, it is explanatory.

Front Page is straight forward- and as it is for unexpanded QLs, and has relatively "simple" and unsophisticated features, so it should be. There are no printed examples in the manual, and it isn't the result of "Front Page" which is disconcerting- it looks as though "Gap" does not even have faith in its own package...

I'm happy to be able to report that the program does not use any special protection or codes on loading, so you can make a back-up and start straight away with only a back-up cartridge.

Once this is done, you can get down to some practical work. The program loads quite quickly and you find yourself presented with a screen divided into two main areas. There is an area of screen set-up like white paper covering the top two thirds of the screen, and an area of green with small black writing that is the menu block at the bottom. The display area is shared by a strange vertical bar on the right of the screen that is just an advert for the program- why it is there is rather a mystery!

The display area shows you part of the page, and pressing the up, down, left and right cursors moves you around the full area of the page. As the program is working in only 128k, and the page itself is stored as a large graphics display, the memory necessary for the 800 dots by 800 dots resolution is just over 78k. Naturally, in a standard QL with only 98k spare, that does not leave a practical amount of space free for the program. The result is that Gap has written "Front Page" in such a way that it stores only a quarter of the page in RAM, and the rest on the microdrive or disk. If you add extra RAM, you can use RAM disk. (Special versions are available)

On a standard machine using mdvs his means that when you move the cursor up or down the page, FP has to save the present section, and load in the next. If you are moving around the page a lot, it becomes very annoying, and slow. However, if you decide what you are doing in advance, you can reduce the need for such moves, typing over the page, not down.

The Psion set of programs is the most common introduction to the QL as a productive tool for most people. That uses the function keys to start a function, and then the initial letter of each function to activate it. "Front Page" is different- it uses only the function keys for functions!

Gap considers that using the alphanumeric keys is confusing for keyboard illiterate users. As there are only five function keys, and they are easy to find, the program should, the thinking goes, be much easier to use. I am not so sure. For example, the F3-Save, and F3-Load of "Quill" and the other packages is easy. The F3-F2-F2-F2, and F3-F2-F3-F2 of Front Page is not memorable. Likewise, F3-Zap to clear the Quill document is better than FP F3-F5-F1. I can't remember that!

The other problem is that the chances of a mistake are greater a fact that Gap acknowledges- he mentions pressing F3-F2-F5-F1 to print out an important page, and the F2 didn't register. You will no doubt realise instantly that he cleared the page by accident!

The range of facilities offered to the user of this package are puny compared with the others that require at least 384k, but considering the limits imposed by the standard RAM, remarkable.

You can type text into "windows" up to the size of the screen, in any of the standard QL character sizes. The standard package does not support hi-resolution founts or elaborate text handling, but it does allow you to build up a larger character from the useful sets of user-defined characters.

These, like the range of founts available, can be supplemented by your own sets, and can be smoothed out as Gap suggest with the simple line and dot routine. This is not for graphics- you can merge in illustrations, and other images such as graphs from other packages that can store a standard 32k screen display. Gap even explains colour conversion.

There is also full control of QL devices, so you can move your pages around, and format media while you are still editing.

Finally you can output your page on most dot matrix printers, and specify density and the number of passes. Quality? Fairly good. It's usually better photocopied.

QLiberator offers all programs simple error trapping- to the extent of saying "I've crashed- shall I try again?" That is all very well, but in most cases you cannot try again successfully. However, if "Front Page" does fail to trap user errors, then you are at least reassured by having at least 3/4 of your work already saved on the microdrive.

The error trapping is typical of the bad parts of "Front Page". I do feel that some of the program feels inefficient in operation, but that is only gut reaction. Key combinations used and wasted screen display, the confusing or jumbled menus, and the lack of what would seem to be sensible basic functions does lead users used of more advanced systems to conclude that FP is amateurish.

These points may be explained by Gap's reasons sufficiently- on a standard QL you are so limited that these failures can't be put right. "Front Page Extra" series is supposed to rectify all the faults of this version, and does in most cases, but fundamental flaws in it still seem present.

Finally, Peter Chambers prides himself on being able to offer all his customers friendly help and advice to back-up packages. He will answer queries every day of the week until early evening. Although recent developments are making this service less accessible, he does call people back, and he does answer letters.

If you are content with your QL as it is, but you would find the ability to design pages of mixed graphics and text useful, there is no reason not to use "Front Page". The shortcomings will not now be reduced, and you should not expect very much, but if you have not used any other package, then you may well not miss the extras present on such packages.

Front Page is the only desktop publisher for the unexpanded QL. It is refreshing to find someone who does not expect you to make a big investment in software or expansions to do simple tasks.

# MORE PUBLISHING "QL SUB"

Some of you have commented that the quality of text in "QL SUB" is not as good as it could be. That is a fact that we are quite aware of, and indeed we have commented to each of the authors responsible for the QL desktop publishing packages that the quality of small text is not good enough. We understand that efforts are underway to rectify this matter.

## Text 87 for "QL SUB"

We have also been using "Text 87", from Software 87. (They have very kindly sent us a review copy.) It is a very powerful, but initially very daunting word-processor. Our use has been with a view to using it for future issues of the magazine, and of course to let you know whether it really lives up to some claims made. (It will be reviewed in issue no 3.)

This page is printed on our Epson GQ3500 laser printer in its standard typeface, and is output from our copy of Text 87, using a prototype printer driver that they provided. As you can see the laser printed text is of superb quality, although the larger text is more ragged. Our next price list will also be laser printed, so that it is even better.

It could certainly help us to make "QL SUB" look more professional, but it requires quite a large number of changes in our approach. As it is not a desktop publisher as such, we will be back to cutting and pasting headings and screen dumps, although when the printer driver is perfect we will be able to print large text for headings from within Text87.

The author is very helpful, and is very keen to help users make the most of it, although I think that people who struggle with Quill will find that Text87 may be very hard to get used to using, and will have to phone him up for help quite a lot. For example to change to underlined, you must press several keys. You can simplify regular setting changes using the facilities of Qjump Super Toolkit 2, or a simple key-definer.

Printer drivers for the Psion suite are a frequent source of confusion, but at least these can be configured by a program supplied. To configure the Text87 printer drivers, you need to type in a number of tables into the printer driver, and then turn it into a workable file using a machine code assembler. Naturally, those who are not really interested in writing machine code will not usually have an assembler. Popular printers are already supported by Text87, but if you have a peculiar one, you need to order a custom one from Software87. Anyway, as you can see, we are now learning how to get basic text from the program with Software87's help.

## Developing our Style

If you like the style and production of this page, and would therefore like us to use it in the production of future issues of "QL SUB", then please let us know. (We'll be using the laser for some pages anyway.) As I've already mentioned, we also anticipate new versions of each of the desktop publishers soon and will be putting them through their paces.

"QL SUB" is produced and paid for by subscriptions only, (typesetting is impractical cost wise,) and we wish to maintain production on the QL. We do not think that to produce a QL magazine on an IBM PC or clone is desirable, (apart from the fact that we don't have one,) as it does not show-off the QL's capabilities, and even suggests that the QL is not capable. QUANTA has been produced on a PC for some time, but as that is published differently, there are apparently special reasons for doing so. (Incidentally, I understand that in future QUANTA may be published using a PC desktop publisher too.)

## "Comments Please!"

If you have any ideas how we can improve the layout or production of this magazine, (within our limited means,) whilst retaining A5 format, then please let us know in writing. You might see your letter in print!

# INKWELL DELUXE FROM PALANTIR PRODUCTS

"Inkwell Deluxe" by Palantir Products is the only program they have written for the QL (to our knowledge) but has become widely known, and is popular among those QL users who have a pure "user" attitude- they don't want to know about the techniques, just the results. On reflection, that's odd.

The program is supplied on microdrive cartridge or disk. Making a back-up is easy, and employs no protection. However, Inkwell Deluxe is written in such a way that it won't multi-task, employing as it does code loaded into resident procedure area and CALLED.

## GETTING STARTED

It is supplied with a photocopied manual of 24 pages that introduces you to the facilities available from "Inkwell Deluxe" in what seems to be a very straight forward manner. The manual is printed in the type styles from Inkwell, and is therefore able to give example of what you can do- sizes, styles, background, pause etc. This is a very helpful idea indeed.

However, the manual is more or less completely wrong in the area of how to write your text, and subsequently printing it out, using the various text enhancement routines in Inkwell.

You write your text and include in it certain control characters when you want to start printing, and so on... It then says, "Save the document." As that is something that almost all QL users will be familiar with, users will usually overlook the hidden "trap" in the manual, and so, when they follow the instructions, load in Inkwell, use the print option, and then type the name of the document- mdv2.letter.doc for example, it then prints out- to a device you specify. Unfortunately, when you do so, you get pages and pages of gibberish...

What users forget is that the manual says earlier on the same page that "first of all the document has to be made suitable for .L.D. (see sections 10 and 11 for more details)" A look at section 10 and 11 reveals that you have to set up a special printer driver for Quill using install\_bas, and then use that to print to a file- you don't SAVE the document at all! NB This problem really applies only to use with Quill- not Editor etc..

## MISCELLANEOUS POINTS

1. Prepare a document using a standard editor such as Quill ( see section 11).
2. Place this in MDV2.
3. Load INKHELL DELUXE in MDV1 ( see section 3) and follow the directions given on screen.

Once you have overcome the problems associated with the instructions, you can get down to some real work. There is a selection of text at the bottom of this page, all printed on a good dot-matrix printer. The results are ok, but I think that a little more refinement for better printers would enhance performance considerably. You can, however, get output similar to NLQ even from Serial 8056 printers. The only "snag" is that you often get a tiny gap across the middle of text.

## DESIGNING A FONT

The range of styles that you can use, and the flexibility offered is good. The package is supplied with several attractive fonts, and a set of icons, tiny diagrams- visual abbreviations. You can create your very own fonts to supplement those provided. Palantir plans to have sets of fonts which can be bought at extra cost. There is a remarkably good font editor built-in, and Inkwell allows you to manipulate existing ones in a variety of ways.

## QUILL AND OTHER EDITORS

The "proof of the pudding, is in the editing" of course? Inkwell does seem a bit of a pain at first, but it is worth persevering with as long as you don't expect too much. You write your text hoping that it will come out on the paper without overlapping the edges, leaving too many spaces, or generally looking wrong. The text is usually proportionally spaced, and so you cannot tell, until you see the result what it will really look like.

Thankfully, there is half a solution. The program includes a preview option which displays the text as it will look on the printer. This is superb- but has a major flaw. As the program does not multi-task, you cannot use the option until you have saved it, quit Quill, and loaded up Inkwell. You then note problems, load Quill, edit the text, and so on. Oh dear...

## SIMPLE PRINTING

Inkwell Deluxe is competent, but no more. It is sadly let down by having to take the machine over each time it is used. The authors seem to be very arrogant, as there is no way to quit it other than to RESET. Surely users could be allowed to do that at least?

The program has its place. It fills a gap for users with basic QLs who want results more attractive than standard print on a cheap printer. Output is attractive, but you may later be left wondering if it was worth the effort.

# Becoming a Keyboard "Maestro"

Typing is something everyone does in their own style, although there's the official standard that everyone is supposed to be able to learn, and that all typing tutors aim to teach. My personal method of typing has developed due to being a programmer. I am told that I use three fingers on my left hand, and two fingers and my thumb on my right hand—but I am fast enough, so I don't worry too much.

Touch Typist by David Batty, the boss of Sector Software, is a surprisingly good piece of software. When someone has full control over what they sell, their own work is likely to get good coverage. In this case, the program is sensibly priced, and well written.

It is supplied on a microdrive in a small wallet or stapled into a folded wallet insert. There isn't a manual, as the package is self-explanatory in use. There's a short text file on the medium which explains how to use it.

You can run the program straight away off the original medium, but you are well advised to make a back-up first. There is no protection used, so you can easily transfer the program to run from disc if you've bought it on microdrive. It loads quite quickly, the display of an unnecessary loading screen the only delay getting going. It is not "multi-tasking" so you may have to boot your QL from scratch.

Once loaded, you are presented with a "sketch" of the QL keyboard, from the function keys to the left of the mdv area. There is a menu bar across the top, and you can move the cursor keys left and right to select a menu. On highlighting each option, appropriate drop down menus appear, and you can select other options by pressing the up and down cursor keys, and space.

These menus cover general options, selection of the course sequence, of results, and the display of results, sentence editing, saving and loading. You can, for example, choose to group sentences together, or repeat each one a number of times for practice. You can also start from any lesson.

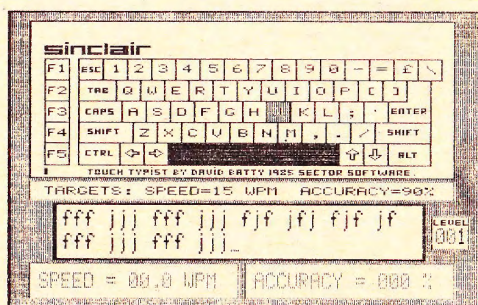
You are shown a piece of text first which describes what you are going to have to do to complete the course. It then drops you straight in at the deep end, and you have to start typing exercises against the clock.

Surprisingly, as Sector claim it is able to teach you to type, it does not immediately offer you, or show you the option to use the tutorial.

The tutorial shows you where to put your hands, and how to type. It does not, however, go into the usual in-depth explanation of which finger to use to press which key, but shows you a guide on screen instead. This is all very well, but really does not stop you typing in a mixed-up manner. When you have read the tutorial once you are left to your own resources.

For example, another tutorial program even teaches you about posture. (You should be sitting with a straight back, at a comfortable distance from the keyboard, with hands not cramped over the keyboard etc..) Going into that sort of detail may seem to be unnecessary, but many people crouch over the computers as though they are attempting to hide, or protect them, and suffer stiff backs and sore eyes. The instruction text refers to the demonstration option, but I could not seem to find it. I did not seem to be alone in finding the help text less helpful than it should have been...

There are 200 lessons, starting with mundane groups of singled letters, later progressing to full sentences. The keyboard sketch can be set up to "illuminate" keys that you need to hit in yellow, and any key that you hit in error is indicated by turning red. If you happen to catch CAPS LOCK you will be confused the find that any key goes green when hit, which is not explained in the instructions. You simply turn caps off to continue.



On the other typing tutors, you can easily outpace the on screen text on the easy exercises, and that is very disconcerting. You will not suffer any such problem with Touch Typist. One silly feature that makes typing and measuring your speed inaccurate is the way that characters are dealt with. If you are meant to type jddjdd and you

type jddjdd then all that comes up on the screen is jddj which means that the next character you type will correct your error. In real applications you would have to delete the wrong text, and that is another three or four keystrokes usually, as you have to go back, correct it, and then return to where you were. That "feature" makes your measured speed much better. Sinclair "Touch'n'Go" is the only tutor to treat lessons like real text, and that fails elsewhere.

When you have completed a number of exercises, you can claim a "reward". That is a game of "Space Invaders"—I don't think many people will bother doing so, but it is a nice option to fill in available memory space. (It's not exactly thrilling for gamers.) You can also display a graph of your typing speeds and accuracy, although you may be left in some doubt as to the real significance of the display.

As there is a sentence editor, you can change all 200 sentences if you wish—you could even edit them to allow you to type other languages if you wanted, as languages often use certain groups of letters, although there is not any support for typing foreign letters. Other programs do not offer this facility very easily.

After completing the entire course in one evening, by both the official, and my programmers method, I gained an average speed of 35 words/minute, 90% accuracy, and 51 words/minute, 95% accuracy, for each respectively. You can adjust the "targets" so that you can do the course again with more stringent controls. For example you can set it to demand 99% accuracy and 50 words a minute—ideal to get even more efficiency from your wife or secretary. (If she doesn't quit.) It is claimed to be able to teach you to type at up to 211 words a minute. We could unfortunately not test that...

Do I recommend it? It is the fastest typing tutor, and the most "fun". It has professional presentation, and an admirable range of facilities. The people who have tried it here seemed to quite enjoy using it. That is not to say that it is the best overall tutor available, but it comes close.

Perhaps I would be right in saying that it is preferable for people who can type a little already, and know the "rules", and who want to become faster typists, rather than better typists. (In terms of using the proper technique.) Certainly I am not convinced that the RSA examination board would be sure that stopping to play "space invaders" is the best way to learn how to type. However, I am sure that they would enjoy doing so!

Touch Typist is by "Sector" Software.

## Deathstrike

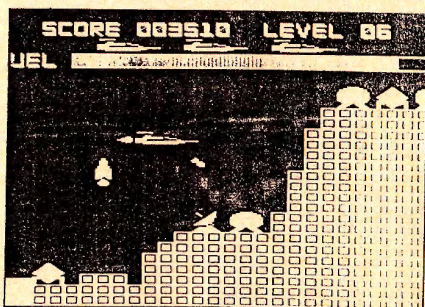
BY TALENT COMPUTER SYSTEMS

This game is called "Deathstrike", and has been reviewed a couple of times by people who have not seen the arcade versions of the original coin-op. The original was "Scramble", and all time classic, and particularly attractive in terms of graphics and sound used.

This QL version displays some superb graphics. Remember that in the early days, the journalists said that the QL would never be capable of doing fast horizontally scrolling games? Scramble is a game where you fly over various terrain at great speed. (It isn't even jerky.) The game also seems to use an undiscovered QL sound chip— it really is that good. The ST version is poor.

In traditional style, you are the only person to have a chance of destroying the enemy mothership. To get there, you have to fly through several levels of enemy landscape occupied by aliens. If you finally do it, then you find yourself with a similar task, but this time it all becomes harder— and so on!

You face enemy ground based missiles that are launched at you and enemy spaceships that hover in front of you. Passive targets that can still kill you are radar dishes, spaceships, and fuel dumps that you must shoot in order to refuel your own aircraft as you progress. There are also the natural hazards of high mountains, narrow caverns through which you must fly, skyscrapers, comets that zoom towards you from the right in swarms, and things that I have yet to see...



If you would like the occasional rest from business or whatever you use your QL for, and you enjoy a really fierce shoot 'em up, then I would recommend this game, as long as you realise that it can do terrible things to your keyboard and your joystick. I often load it up and play to relieve frustration when I cannot get programs to work, or erase a vital file. I return with new hope, and a very tired trigger finger.



# "SCRABBLE" A 2-4 player word-game by Leisure Genius

If you have been considering becoming a faster typist with "Touch Typist", or improving the "look and feel" of your QL keyboard with a replacement Schoen top, you could pay attention to your vocabulary, and have a bit of fun at the same time. After all, with all the hard work involved in typing better, you may well enjoy a break...

"Scrabble" by Waddingtons, is one of those "classic" board games, and was well converted to the QL and several other computers by "Leisure Genius". It is described as a word game for two or more players- including your QL!

As success at the game of Scrabble is dependent on finding words to "slot" into a matrix of other words, if the computer is to be a good opponent rather than just a referee, it needs to have a good and wide vocabulary. Different versions offer computer vocabularies from around 8,500 to 20,000 words, although the latest PC versions for 512k IBMs offer up to 85,000 word vocabularies. The QL version offers 20,000. Some of the words in each version are very odd!

The game is supplied on microdrive but can be copied onto disc. However, you need to have the master cartridge in the right-hand microdrive when you load the game. The special code on it stops people making "pirate" copies.

The game is certainly better to play on either a large, or good quality TV set, or a monitor, as it displays a more or less perfect representation of the scrabble board, complete with the use of stipples to produce extra shades of colour for maximum effect. These are very hard on the eyes on a TV set that suffers from QL ripple.

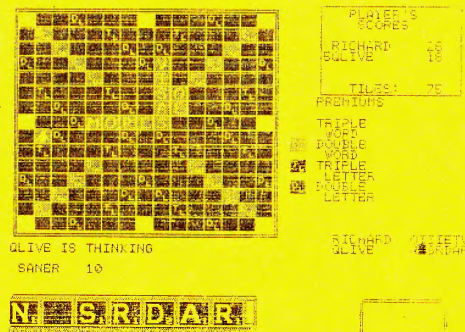
When loaded, the game asks a number of questions. You can also re-load a game that you had saved earlier. (You can save your game at any time.) You can also choose to play against the clock, in which case you can select the length of time up to a minute in which each player has to make their moves. (That includes the computer.)

Next you enter each player's name and their skill level if they are to be a computer generated player. You can then decide whether you wish to see the computer "thinking"- trying out different words during the game. You can also decide how fast the computer will place its words on the board, and if you wish to see other's racks.

During the game, if you place a word that the computer does not recognise, then you can accept or reject the word- if you want to cheat, then you can, but the computer is a perfect gentleman and expects your honesty. You cannot challenge the computer's words, although on occasions the words that it comes up with are a little dubious to say the least. You are left wondering if Leisure Genius employed a team of foreign only programmers...

The words used by the computer are progressively more unusual as you increase the skill level of players- so you can practice with a variety of computer opponents before using the program as a computer referee when you are playing against three humans.

The only real irritations with the program are those that I have already mentioned- the unaccountable ability of back-up microdrives to become corrupt, the key cartridge protection and the lack of any multi-tasking. These points are all forgiveable in light of the highly addictive nature of the game, and excellent design.



For some reason the game files become corrupt very easily indeed, and so it is very important that one makes a number of back-up copies. It loads reasonably quickly, and will run on any memory capacity without "hassle". Unfortunately, it does not multi-task so you cannot get on with any work at the same time and you need to reboot.

If you are one of those people who do not like to admit that they could be spending at least some of their time with their computers entertaining themselves, then Scrabble may be a good program to start playing with. After all, as I suggested to start with, you can always say that you are using it to stretch your vocabulary!

# Thanks for the Extra Memory!

The QL is equipped with 128k of RAM as standard. In the "old days" that was so much that people laughed when Sinclair included a promise for 512k of extra RAM, giving it a maximum capacity of 640k, (with the remainder of the megabyte possible reserved for expansion boards) in the QL brochure.

Now a company who launches a machine that has under 512k RAM is considered to be a little behind the times, and the machine needs to have something very special to succeed. In the case of the QL of course, it was launched before this new outlook started, but the QL has the ability for something that both, "gives it the edge", and requires copious amounts of RAM. That is the ability to do multi-tasking.

On conventional computer systems, you load in one program at a time, and that program uses all the available RAM remaining. Even if you have a program loaded that only uses 50k of data space, perhaps another 400k of RAM is effectively wasted, not needed for the program running at the time. On the QL, as you may understand from reading issue zero, you can load in more than one suitable program at any one time, and the QL will switch from one to another all the time, running a little of each program each time.

The end result is that a user sitting at their QL finds their present task being carried out, apparently without interruption, even while other tasks, either already started, or ready to work on, continue at the same time- for example printing the last letter you wrote, or calculating that large spreadsheet or ordering the names and addresses in a database of customers.

On the standard QL, multi-tasking is possible, but the four Psion packages and most other programs presume that in the limited RAM available, they have "the right" to take all the 128k and to use all other resources more or less exclusively. That contradicts guidelines for software authors given by Sinclair- but it's not surprising.

If you have ever owned a Spectrum or similar computer you may be surprised that a program needs so much RAM- on the Spectrum programs only have 40k. The difference should be that on the QL and similar computers programs are more sophisticated. (Sometimes, it is that the programming is inefficient.)

Naturally in order to accommodate more than one program (together with any associated data) the QL needs to have more than the standard 128k RAM. Of course if programs are very compact there's no problem- some programmer's tools multi-task easily in 128k RAM.

If your machine is doing everything that you need it to, then you are not missing out by not having extra RAM. However, if you want more from your QL than extra RAM, as zero outlined, is the most useful, (and economical,) expansion to buy. There are a number of RAM expansion boards to consider.

As you should have read in zero, the internal RAM expansions do not offer the QL the advantage of extra speed, but do leave the expansion port free. All the currently available external units also leave the expansion port free, so the advantage is nominal. If you want maximum performance from an expanded QL, however, the choice is more limited. The CST "Ram Plus" unit and a unit by American Mathew Zenkar both offer zero-wait states. The Thor also uses such RAM. The computer can then read data from it about twice as fast as internal RAM- the effect on programs is definitely noticeable...

The most popular RAM expansions at the moment are the Expanderam, by Miracle, and the "ThruCon" card, by Sandy. Both offer a through connector and 512k RAM now the standard size. Looking at both suggests that the ThruCon card is the better designed of the two as it is about half the size of an Expanderam, but the Expanderam looks to be the one more suitable for use with other expansions as it is supplied with a black metal cover. When an interface is plugged into the end, the cover conceals it, protecting it from harm.

Spem manufacture a popular internal expansion board that is simple to fit. It is completely compatible with most expansions, although some versions will not work with internal extras.

We think looks are important too- if you are building a modular QL system, whatever it is going to cost you, you want your QL to look professional not like a D.I.Y. kit of bits and pieces. All the expansions mentioned here will look good with your QL- the only one that has doubts in this score is the "ThruCon" because it leaves the circuits of other interfaces exposed. On its own it's completely concealed. (An internal expansion is just that.)

Of course, the other way to expand a QL is to buy a combined RAM and disk interface- but there's no problem in doing it in stages and buying the two units seperately- it can be cheaper!

If you do buy a RAM expansion we have a public domain RAM prog to help you make the most of it. There are many programs that enhance an expanded QL's facility to perform multi-tasking. For example, GRAM, Taskmaster, or Swapper. (There are another 101 RAM utilities!)

## Need a MultiROM?

The MultiROM is a little known, but completely unique expansion for the QL. It is a 16k RAM cartridge to plug into the 16k ROM socket. This means that you can use all software meant to run on ROM with it. This saves you having to keep swapping cartridges which is both tedious and can make the connections loose. You can also test any 68000 routines that you want to put on EPROM, without the hassle and delay of having to program one. You must NOT "pirate" ROMs of course.

The unit itself is a compact box that slots into the expansion port like a standard ROM cartridge. The QL does not provide suitable connections for RAM. To use the unit, you must fit a small link inside the QL connecting pin B7 on the expansion port to the spare connection on the ROM socket.

This rectifies the problem. Although fitting is easy, and there would have been no other way to do so, there is a problem in that if you want to show a friend your work, or use the MultiROM on another QL, you cannot do so.

The unit uses an ingenious design to offer 16k of RAM, and a possible 16k toolkit. The toolkit commands allow you to initialise ROM images, for use in the MultiROM, and initialise ROM images (relocatable only,) to work in RAM. Commands to control total RAM capacity, and a range of other useful commands, including a default device driver. That makes many file commands use a default device automatically. The level 7 interrupt, (-CTRL ALT ?-) that usually freezes the QL is set-up to warmstart the QL like CTRL ALT DEL on an IBM PC compatible. Very useful!

To use the unit with an existing ROM, you plug-in your ROM cartridge, type `sbytes adv1_name_rom, 49152,16384` or applicable. You then turn the QL off, plug in the MultiROM and use `LOAD_ROM` to initialise the unit. This resets the QL. Further uses of the command check the file against the ROM in the MultiROM, and if they are the same ignores the statement. Effectively a boot file can "plug" the rom in too. A similar command, `RUN_ROM` will load ROMs into QL main RAM and initialise.

Although expensive at around £59, the unit is a professional solution to a piece of amateur design that plagues QL users who use more than one ROM. A bad marketing strategy, and a total lack of advertising has meant that this unit is not presently available from any dealer to our knowledge. The company itself can be contacted at: Micro Control Systems, Electro House, Bridge Street, Sandiacre, Nottinghamshire, NG10 5BR. Telephone: Mark Snape on 0602-391204.

## SANDY "QPower"?

The QPower unit by Sandy (now "Power Computing") is they claim, the answer to all the over-heating problems that some QL users seem to be afflicted by even when running unexpanded QLEs. The unit is a miniature switch mode power regulator that plugs inside the QL in place of the existing heatsink and 1 amp regulator. It is smaller than the QL heatsink, with just a single chip and a few other components on the board, measuring under 5cm by 3cm.

The instructions are easy to follow, and you soon have the heatsink and regulator removed, and the QPower can then be installed. First problem. You find the it is almost impossible to screw the circuit board into position and on some QLEs, it is impossible. If you pass that hurdle without damaging any of the surrounding components by trying to force positioning, you can power-up your QL again and test it.

The units perform beautifully- you really notice that the top of the QL is almost cold. All the QLEs that we tested performed without any problems heat-wise, and we expect to find that QPower units work consistently well.

The second problem usually occurs at this point, although some people are lucky, and for some reason their QLEs are immune to it. If you go to access microdrive 2, it spins and spins, and the QL hangs up. It has not crashed, but the QL never stops checking it. This seems to be due to interference from the power supply "broadcast" by the metal shaft that it attaches to. When microdrive 2 is shielded, this problem is usually solved, but in our experience it isn't foolproof. I am astonished that Sandy seem never to have even tried it with microdrives!

The other problem is linked to the power output of the QPower. Although the regulator in the QL as standard is rated at 1 amp, it outputs more. The QPower, when we tried it with some expansions that took 300ma more than standard QL, failed to provide enough power, although it works fine with the Trump Card and SuperQboard, and I would expect most other units.

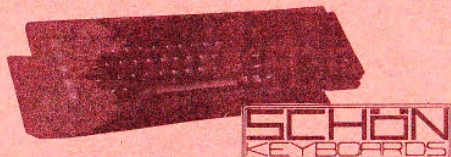
The "QPower", like other products has an annoying "but". It works well, BUT you have to mess-about to fit it- if you open up the QL and try to shield QPower with tin foil or something similar, then it would be all too easy to cause a short circuit, and seriously damage the QL. Also, as the unit is a very tight fit, and Sandy make it clear that it shouldn't touch anything else, the QPower circuit board design is poor. Even moving the mounting hole in it would have been a better design making it a better buy.

# Schoen Standard Keyboard

Although the QL now has a very good reputation among those "in the know", and no longer gets the slating off at any opportunity that it used to in the popular press, the first thing that puts many people off it is the keyboard. (The other is microdrives.) You may be very happy with your QL keyboard as it is, in which case you can happily ignore the rest of this review. (I still use the standard.)

Schoen keyboards, (pronounced Shurn,) have a low cost replacement for the standard keyboard that is such a good idea I am frankly astonished that schoen is the only company making one. It replaces the keyboard without making the QL larger, less elegant, or incompatible with any expansions. It retains the standard layout, and uses an identical top to the QL, whilst replacing the key mechanisms and the standard designer keytops themselves.

With that description the keyboard could well sound ideal for everyone. There are several other criteria for a replacement keyboard for the QL, however, so we will be considering all the pros and cons of this solution.



The keyboard is black, with keys in two different shades of grey- the "special" keys such as cursors, shift keys, and tab/caps lock keys are in a lighter shade that subtly highlights them. The five function keys are red. All keytops are marked with the QL symbols and retain standard positions. They are apparently two-shot printed which means that the characters will never wear off- an important point.

An obvious moan is that the ENTER key is not the same shape as standard- apparently it was almost impossible to get a backward L shaped Enter key, so an alt sized key is used, with a normal button in the space above it.

That key unfortunately does not have any function- that is a pity as it would have been a good opportunity to add a scroll lock key- operating CTRL F5 to pause screen output, or SYS REQ by operating CTRL C. We may be able to run a little feature in a future issue to show how this can be done if you fancy a bit of QL do it yourself.

The feel of the keys is good- one can build up still better speed! What can happen as you get faster at typing, however, is that you may get some key-bounce, and suffer from problems arising from the lack of two key rollover on the standard QL. These two terms basically come down to getting a double response from a single keypress, and a double letter if you press another key before you release a previous one. Some people find these problems, and some don't- it depends on your typing style and your speed.

Schoen have a chip that they say cures the problem of keybounce- but it brings problems of its own, and we recommend that at the time of writing if you buy this keyboard, you DON'T fit the chip. The problem is that it puts your serial ports out of action as it is a reprogrammed 8049 second processor that deal with keyboard and serial communications. If you use a modem, or connect your QL to other computers, you will be in trouble!

As the replacement top is usually a fit-it-yourself upgrade, if you are a bit nervous, you will be glad to know you don't need technical ability. The QL keyboard is normally linked to the circuit board via a "ribbon cable" (a flat lead carrying multiple signals.) The Schoen connects by the same method but with a more sturdy cable. The key switches themselves are "the real thing"- no membranes or bubble mats. The instructions supplied are easy to follow, and as fitting involves no soldering, just undoing some screws, pulling out some cables, and then replacing with new ones, nobody should really find difficulty. The case can sometimes be a tight squeeze if you have a battery backed clock, or a Qjump QIMI fitted, but it will fit ok.

Having pointed out the problem with the keyboard anti-bounce fix, it must be said that we have not experienced the keyboard bounce problems that it is meant to cure, and we have heard from a number of users who suffer the same problems on the standard QL.

If you are basically happy with your QL keyboard as it is, (as much as I like the Schoen unit, it has not been enough to make me part with my well worn Sinclair unit,) but you are having a problem such as keybounce, or a key that does not always work, it is well worth repairing the standard. A replacement bubble mat can often cure keybounce, and a replacement keyboard membrane is cheap and simple to fit, and will cure unreliable performance from some or all your keys completely.

# Pros & Cons of Disks?

If you have been considering adding muscle to your QL by adding a disk interface and disc drive(s), you may, having read about the various options for expanding your QL in issue zero, be wondering just what you should link up to a disk interface in the way of drives. I hope this helps.

For starters, all QL disk interfaces use the same method of arranging data on disks, (with one or two niggles,) and should all be capable of working with the same disk drives. That means that even if you and a friend each buy different interfaces, you should still be able to take a disk from one and put it in the other, and still be able to read and use programs and data put on the disk by the first.

Naturally, there are a few problems. There are 4 sizes of disk available, these being 8", 5.25", 3.5", and 3". It does not necessarily follow that you get more information on 8" than 3" disk. The 8" drives are unsuitable for use with QL interfaces, and very few QL users use 3" disks, as there is no software available on them, and the disks are more expensive to buy.

It is the number of heads on the disk drive, how many tracks it can read, and how the data is formatted that determines how much data can be held.

## An Explanation

The number of heads determines the number of sides the disk drive can read on the disk- 1 or 2. A head is like the needle on a record player, in that it picks up the signal from the surface of the disk. The number of tracks is the number of magnetic "rings" that are available for use- the greater the number, the more data can be stored on the disk. These are not like the groove in a record as the surface is covered in concentric magnetic rings, not just one spiral. Finally, how the disk is formatted comes down to the way the data is laid out on the disk. On the QL, it is laid out in 9 sectors, (each like a slice of a cake,) with half a k per sector, giving 360k maximum per side. With two sides you get 720k per disk!

On the QL, and some other systems, a machine equipped with better drives can read data from a lesser one, but the opposite does NOT apply. QLs with double sided drives can read from QLs with single sided ones and those with 80 track drives can read data from 40 track drives, and all combinations.

5.25" disks, (or diskettes,) are the most widely used on microcomputers at the moment, although all the latest

machines are using 3.5"- the Amiga, ST, Archimedes, and the latest IBMs. With IBM using 3.5", 5.25" will over the coming years become less popular. On 5.25" disks, it is possible to turn the disk over if you have one of the cheaper single sided drives. As 3.5" disks are supplied in a clever protective plastic cover, you can't turn them over- you can buy single sided disks that are cheaper however. (All 5.25" disks are cheaper still!)

Some 3.5" units, most notably the "Dattel" unit from France, and some special bargain disk drives that are sometimes advertised, are only single sided, so you only get 360k per disk. It is also impossible to read or use information from a double sided unit, even though a user with one of those drives can read and store information on the single sided drive as normal.

## Disk Software!

Most serious titles are available on either microdrive or disk, and some software houses go even further, and can supply on 5.25" disk too. It is more common, however, to have to buy your software on microdrive, and have to copy and convert it to use 5.25" disk if you own one of these units.

The one area where the 5.25" drives are more popular than 3.5" is where the user needs to be able to transfer data from the QL to one of the older IBM PC compatibles that are usually equipped with such drives. Using a suitable utility, such as "Discover", you can easily bring your home work with you, store your results on the office computer's disk, and return. If you have 3.5" drives you will find that although the format of the disk is compatible, you are stuck because it is physically incompatible. Aghhh!

If you cannot decide which size to go for, you could consider the "QMulti" that has both sizes in one dual unit. Then the problem is making back-ups. The most convenient unit for back-ups is a pair of dual drives- of the same size. Single drives cause difficulty- just imagine having one microdrive...

## Popular Drives

The most popular type of disk drive for QL users is the 3.5" dual unit. This usually offers 720k of storage on each disk, so you have a possible 1440k of data available at any time, if you have a disk in each drive. Back-ups are also more easy to do!

Many suitable units are available. Just browse through our catalogue for prices or buy some with an interface.


# MIRACLE MODEM?

Last month we reviewed the Tandata QCOM system. This month we take a look at a tiny "QL modem" from Miracle that offers similar features for less money—the only snag is that it is not approved for use with any British Telecom phone lines. (It is perfectly safe to use of course, and reliable, but Miracle have not gone through the lengthy and costly modem approvals.) Don't tell Telecom if you use it.

It comes with a rather cheeky message on the back that proclaims that if you use the modem, everything will be ok, but that they are forced to show the message and triangle on the back.

## MIRACLE SYSTEMS LIMITED

This modem is completely compatible with networks such as BT's, and is fully isolated. If it were to be connected to any of these networks then no damage would occur to the computer, modem, or network under reasonable use. It is a legal requirement that we display the following:

 PROHIBITED from direct or indirect connection to public telecommunications systems. Action may be taken against anyone so connecting this apparatus.

It arrives in a small box, and when you unpack it the modem is nothing more than a small black box with a small LED on the top. If you have a serial to parallel converter, you will notice that it is the same box. A black lead runs to the ser2 port on your QL, and a white lead runs to the standard inphone socket that you will probably already have. If you don't, you should get one fitted by Telecom.

As the modem is so simple, there is not much that can be said about it. It is driven by the software provided and so that is the more important part of the package. If the software can drive the modem sufficiently well to make it a pleasure to use, then the hardware itself is irrelevant.

The modem is supplied with a piece of software specifically set-up to work with the modem, QTerm. It is supplied on microdrive, but can be copied onto disk if you want. It does not appear to multi-task, and my attempts to make it do so failed. I will be sent dozens of letters if I say it won't!

Once loaded, the package displays a title screen, and then a menu screen very similar to QL Terminal reviewed last month. Perhaps I should say that QL Terminal look similar to QTerm, as that was the earlier one available. I note that the authors are different.

On having loaded, you see a page of bulletin board names and numbers, and information about what service type

they are—that is VIEWDATA, ascii, or UT52 terminals. You can enter your own numbers, and store them with settings for later use. The emulation of each mode is good, and VIEWDATA mode is in fact smoother than the QL Terminal. It is confused, however, by some frames, and so it can behave slightly unexpectedly at times.

Using it is fairly straightforward, and I had no problems logging-on to Prestel using the modem and software supplied. I have, however, had lots of interested enquiries from QL modem users about other software for it, and so I must presume that extended use of the package is less pleasing. Certainly the package suffers from a number of rough edges, but never the less, the package does the job, and will get anyone up and running quite easily. The accompanying manual is brief more than necessary in places, and can leave you wondering if you have missed the point altogether.

You can save frames from VIEWDATA services such as Prestel, print them out, prepare messages off-line, and transmit them later. You can also create pages off-line, and update them quickly later if you need to. You can keep a copy of all text transmitted on a printer or in a file if you access a non viewdata service.

I tried using the system to access a number of bulletin boards, including those already stored on the software, and was dismayed to find that most of them had ceased to exist. Perhaps it is time for Miracle to update them... It accessed all the boards I used without difficulty, although it is somewhat frustrating to have to wait 40 seconds only to discover that the line is busy—the software says wait 40 seconds, then hang-up if no data has appeared on the screen. The other problem that I had was a failure on the part of the software to hang-up. On some services, quitting made no difference, and I was left trying to leave a service repeatedly. In those cases I had to quit the package completely, or pull the phone jack out of its socket, quite a way away.

My model was completely silent in use, and performed well. For those of you who want technical information it can handle 1200/75, the usual Prestel standard, and 1200/1200 half duplex which is the standard for user to user communications using QL modems.

So would I recommend it? Yes I would. For price it is unbeatable, and it is certainly the most compact system any user could hope for. The only problem is the lack of approval—if that does not worry you, (remember that you can be prosecuted if BT feel nasty,) then buy it. You will not be disappointed.

# PROTOCOL CONVERTER

Having taken an "in depth" look at Prestel from the point of view of the average user in the previous issue we have decided to look at Prestel from the point of view of an information provider- an editor on ClubSpot 810.

We hope that this article, and future "Protocol Converter" articles will be able to give an interesting insight into "behind the scenes" operation of an area on Britain's most popular database for microcomputer users.

## Who Controls ClubSpot 810?

ClubSpot 810 is an area on Prestel Microcomputing "given" to the British Association of Computer Clubs. It is administered through their Electronic Publishing Committee. The B.A.C.C. is a democratic, and perhaps bureaucratic club for computer clubs that acts like a club "watchdog". Publishing articles in several magazines at quite regular intervals, and carrying editorial in "Personal Computer World" and "Micro Mart" every issue, it carries quite a lot of weight, sufficient enough for Prestel to merit giving the areas to it to provide interesting independent information for all computer users.

The B.A.C.C. still has to "foot the bill" for all the costs involved in running the area offered, however. For example, each time any response frame is filled in and sent, it costs the organisation which receives it 4p and there are charges for editing and amending pages in some circumstances.

Editors have to meet their own costs- their subscription to Prestel and the Prestel Microcomputing area, plus all telephone bills and any time charges. All editors on ClubSpot 810 are true volunteers- there are no fees paid to editors, and no incentives to edit except, ah- I'll think of something.

## Accessing it on Prestel

When you log-on to Prestel and type \*810 you are entering ClubSpot 810. The area is divided into two parts- ClubSpot, and HobbySpot. These names are more or less trademarks, and they cover computer clubs and activities, and personal activities respectively.

\*QL# for see QL Database.

Before anyone starts to edit an area on Prestel, the individual must go to a training session run by ClubSpot that lasts for a day, and is run in the Prestel headquarters at Telecom. The course usually teaches around 20 individuals about editing- their new areas on ClubSpot being as diverse as computing for the handicapped, chess tips, and even a maths puzzles area.

Our morning was taken up with talks on the relevant aspects of setting-up a database on ClubSpot. There are a large number of rules that have to be observed, and each editor is supplied with an A4 guide detailing them. If you break the rules you may no longer be allowed to edit, and your Prestel account may be terminated by Telecom. (One's initial reactions to the rules is that ClubSpot is a dictatorship.... On closer analysis of the reasoning in the rules one realises that "ClubSpot" is dependent on keeping on a good side of Prestel, so the rules are vital for all continued growth and success.

## Hierarchy of Command

There is a hierarchy of command. The "Editor in Chief" sets-out many of the conditions, and makes decisions at the highest level. Down a level there's supposed to be a "ClubSpot" section manager, and a "HobbySpot" section manager. From there down there are section managers, and then there are different levels of control in each area of the individual area.

Allocation of pages to each section is made as necessary by the section managers- creation and deletion, and moving of pages is only possible by at least this level of authority. As these people are themselves amateurs- they are unpaid, but professional in their approach- such operations are dependent upon them finding the time, and if creating pages, the space. To editors it is of course irritating!

## First "Hands-On" Editing

The afternoon was taken up with some "hands-on" experience of editing, and fuller explanation of techniques and operations available to new editors. At first these are somewhat daunting!

Operations available to editors are basically alteration to the look of a frame, and the routes from it. All the editing operations are available only on the Duke Computer. (Although there is a network of computers and you can access Prestel normally by dialing a local "node" at cheap rate, this does not apply to Duke sob sob.) That means that all editing has to be done direct, which in our case means a long distance phone call each time.

## Very Slow Access to "Duke" A Super User Board Soon?

The other annoying aspect of the Duke computer is that it will only accept access at 1200/75, the second slowest rate currently available. The 75 is the baud rate for transmission, about 7-8 characters a second- this makes updating pages tedious and costly. At least with a suitable package you can edit all your pages off-line and then transmit the lot at cheap rate. There is a system called "BULK" that allows Prestel to determine where each page goes, almost automatically, cutting out lengthy setting up each time you want to send the next page of text.

One of the important considerations when editing is the ease of use by the person using the database, and the ease of maintenance subsequently. This requires that a section is built in a tree structure. The front page of QNet2 for example, is 810424. This leads down to 8104240, the index, and from there to 8104241, 8104242, etc.. The structure must be planned well at the start- it's hard to alter later.

The other thing that Duke allows is the collection of response frames- unfortunately an editor is not allowed to collect these- only one of the section managers. This is so that no "mail" goes astray. (It also leads to long response times to messages as they do not always get passed on very quickly- the managers may not have time to store them, and transmit them on to the person who needs them all.)

At the time of writing, we are not yet editors on Prestel, but I hope that in the near future, Julie and I will be taking on the editing and updating of the QNet2 QL section on ClubSpot, although when we do start editing, it should be changing both name and design. We will have to suffer several restrictions for quite a while, but we hope that in the end we will be able exert full control over what we put up on the QL area. Incidentally, there is no commercial advertising on ClubSpot.

The first thing we'll need to do is clear out many of the old frames, and set up our own QL database layout. At the moment, although the database was very well layed out at the beginning, it has become rather chaotic over the years, and although it is easy enough for the user to find their way around because of the many indexes, from the point of view of any editor trying to keep track of almost 200 pages/routes it is a nightmare to even start on. This has contributed to the lack of edits done recently by the QNet team.

We hope that the new section will be called "QLeaps"- it should if all goes well be able to tie up with our own bulletin board, Super User Board.

We will probably call our bulletin board "QLeaps At Home" as it will be run from home, and will be a personal concern, edited and maintained only by my wife Julie and I, even though it will be run for the benefit of any subscribers to "QL SUB" magazine in particular, and QL users in general.

We will be running our bulletin board on a QL of course! The original plan for Super User Board was that we were going to develop the software to run it ourselves but over the last months that has become less feasible, and now unnecessary. Two boards that run on QL software already are Atavachron and "Lau's Place". These two boards are both running on more or less the same software- at present it is not a commercial product, although the two authors are considering upgrading it in a number of areas and selling it.

The software is called "QView", and it runs on a QL with expanded memory, although it really needs disk drives too. We've had a version for a while but unfortunately due to getting the very latest version, it doesn't work. In the meantime, it seems that some other QL companies are getting in on the act, and are setting up boards. Sector is likely to be the first. As you read this page it may be running- it will be on their usual number, and may use the ring-back access system.

The system holds all the pages that are available in memory, each frame taking 25\*40 bytes, plus a number of bytes for control information. This means that each pages is available instantly, and so can be transmitted to the user who logs-on to the board very quickly indeed. (The speed of transmission is determined by the modems used, but the access to the data is not delayed by disk access.) The number of pages available is set by the amount of memory available, so a Trump Card would offer most pages.

## Just waiting for a QView...

As soon as we get a working copy of the software, we will have a board on our answerphone number set-up. It may use ring-back where you dial, let it ring a couple of times, hang-up, and dial again. The 2nd time the computer answer almost immediately. This would let us have the answerphone available as well as the bulletin board. (Some people only phone the answerphone...)

We will be continuing with both these themes next issue. Until then, I hope that you have a line-noise free line. If you are in difficulty, just ring us- they say that "a problem shared is a problem halved", don't they...?



# MANUAL RESPONSE PSION HELP YET AGAIN!

We thought that we had covered the area of printer drivers last issue. However, it seems that the area of translates could have been covered in more detail—so here it is in full. Printer drivers are most applicable to Quill, Abacus, Archive, and Easel, although there are a number of other programs available that use the same principle—the method explained here can be applied to other QL programs.

We will assume that you have read the "Manual Response" article in issue 1. A Translate is where the code for a character on the computer is not the same as the code for the character on the output device, usually a printer. For example, as we explained last month, the pound sign on a printer is usually the same code as the hash sign on the QL, that is 35. What the printer driver does is determine what the QL sends as the appropriate code.

## Ingenious use of Translate

Translates can be used to generate characters on the output device that cannot usually be achieved. (From now on, we will assume the output device is a printer or plotter.) For example your printer may be an American model that lacks a pound sign. What do you do when you want to print an invoice? You can use translates to ingeniously generate one from a lower case 'f' and an underscore, or an 'L' and '='. The problem would be that if you just sent the two as normal, you would get 'L=' on your printer. A backspace character on the printer is available that does not display anything, but makes the head go back one space, and so "mixes" the first with the second.

## Pick 'n' Mix Reaps Rewards!

You can apply this principle to many different characters, up to the limit of 10 translates. How about German umlauted characters— for example ö or ÿ. These can be generated with o or t and a pair of speech marks. Also, if your printer does not do a zero with the slash through it to identify it as different from an "0", then you could translate nought as 0 and a / with a backspace (8) between them.

## Adding "Special" Facilities

You could also use translates on characters that print perfectly, but could have a dual purpose. If you have a colour printer such as the Star LC10 for your QL, use the extras— how about

translating the left and right brackets so that in Abacus the left bracket turns on red text, and the right bracket turns black on again. It is important to note that you need to set it up to send the bracket too.

In Abacus, you can then set the units options so that negative numbers are shown in brackets, instead of with a minus figure— lo and behold, with an option of this type, Abacus prints all your negative figures in red... (If you have an ordinary black and white printer you could set it up so that it underlines negative text.)

## Get Bolder with the founts

There are also other codes that are useable as translates, but are not marked as such in the program. These are the codes that are used in Quill to generate bold, underlined, high-script, and low-script fount text.

For example, to use Italics in Quill, even though there is no Italics fount available in Quill, you can set-up your printer driver so that another fount, sets Italics on and off. For example, if you never use low script (subscript,) you can set subscript on to send the Italics on code instead. (You then set the subscript off code to be the Italics off too of course!) The end result in operation is that whenever you want to put Italics in your documents, you put subscript on the page instead. That way although you don't get "NYSIWIG" you do get "What You Expect Is What You Get"...

## DOUBLE width vs. bold

You could also use the fount settings to set the character sizes so that you can switch between PICA (10 cpi,) and Elite, (12 cpi.) You could also switch on condensed type. If you do set up one of these styles then you may need to note the right number of characters per inch (cpi.) That means that you have 80 characters per line on pica, the standard, 96 for elite, and 132 or 136 (say 132 to be safe,) on condensed, and mixtures thereof.

What you type on the screen can only match what you get on the printer if you set the margins to accommodate the right typeface. For example if you use bold to set double width instead of bold, you MUST take account of the wider characters. You could type a paragraph properly justified if you set the margin to half that usually used— ie. left margin 10, right 40.

## Less Desirable Methods

There is one other way that printer drivers can be used, although in most cases it cannot really be recommended as it takes away the relationship between the screen and the printed page, one of Quill's best features!

You can redefine certain characters so that they send a totally different character to the printer, or even no printable character at all. You could for example, set the printer driver to translate the `(` to turn Italics on and the `)` to turn the Italics off. However, this is a problem unless you add a space to the text printed, as Quill justifies the text on screen, and sends appropriate "padding", but as two characters do not come out on the printer, the line is unjustified. (If you put the `(` where you would normally put a space, and make sure that the printer driver sends the code for a space AS WELL as Italics, your printed results will be right, but the screen display will be odd.)

You could also go away from the idea of Quill representing the printed page, and load your printer with a special set of characters. (Only if it is an Epson FX-80 compatible or better.) Your manual will have the details about user-defined characters if it is capable of producing them. What you could do is set your printer driver up so that low script switches the printer into the user-defined character set. This way, you can have each character on the Quill screen representing a totally different one on the printer, and using a reference table to tell you what character to type. That way you can have dozens of translates, and loads of confusion... (If you didn't understand the last bit, don't even attempt to try it!)

## So HOW do I set them up..?

Now having explained how translates can be used to maximum effect, we can look at just how to set them up. From last issue you should have learnt how to create a printer driver, and fill in all the options available. As we explained, the 10 translates can be set by moving the highlight down to the required option, and pressing left or right cursor. You can then type in up to 8 codes by using the special names for some, the decimal or hexadecimal code, or the character with the appropriate code on the QL.

There are a number of codes that have special names- these may be listed in your printer manual. You can type in that name directly, but if you type in one of the codes that has a name in hex or decimal, then that name will replace the code entered, but will

still have the same value. If you have appropriate codes in decimal then you can type them as normal, but if you need to enter a hex number, you need to type a \$ sign before it. (Ninety percent of people miss the explanatory prompts at the page top.) Alphanumerics, (letters and numbers,) can be typed in directly, but with a single quote mark in front. Install **WILL NOT ACCEPT** your character if you do not type this in! It won't accept the double speech marks, and if you put a speech mark after it, it will get rather confused and reject it.

## S.U.B. to the Rescue AGAIN?

If you are really stuck and want to include lots more translates, or even include a logo/graph in your letter, the program in *Finest Hardcopy* helps!

## Config\_BAS while we're On-

The Psion config\_bas is yet another that can occasionally cause problems. You will ONLY usually use it when you are changing from microdrive to disc drives, or are setting up a program to look at a ram disc for printer drivers. However, just to save you problems that might arise, we will briefly look at using the program.

Really the program is very easy to use. All it does is alter the default devices (those assumed as standard,) to those suitable for your system. You can set the device that holds the help file, the one that holds the printer driver, and the one that is used to store your text/data on. For those of you with disc drives, you cannot get clever, and specify the directory- only the drive name used.

When loaded, just type the name of the program you wish to configure. You do not have to type the name on microdrive or disc, just Quill, etc.. (The program defaults to microdrive- if you run it with disc drives, use the `flp_use mdv` command to make your disc drive emulate the microdrives. You are then asked which drive the program is in, and if you are sure.

The best way to clarify the settings for different systems is to give you some examples. For someone with just microdrives, but extra memory, you might want to put the help files in ram disc, (ask about our free "PD" one if you don't have one,) then the settings would be `mdv1_ ram1_ mdv2_`, assuming that you use microdrive 2 for data. If you have disc drives, you will probably want all your data on disc drive, so `flp1_ flp1_ flp2_`. If you have a single disc drive, you could copy your printer driver and help files into ram disc, and set the defaults to `ram1_ ram1_ flp1_`. Easy!

# Finest Hardcopy

Last issue we printed a listing of an Archive program for you to type in, but we did not include any details of what it did, or how it works. That was rather inconvenient, but we ran out of space, and thought you might think that it was fun to try anyway.

This month, this page explains what the program does, and gives some idea about how you can expand it, together with some examples in the form of new procedure to replace old ones. It is also a source of much embarrassment that despite our all QL publishing method, we somehow managed to print a version of the program that had bugs, these having been killed-off earlier.

Many procedures use the key\$ and ok\$ variables. These are known as global variables, and set up in init\_vars. This is a quick run-down on all the procedures in the program- maybe when you know what they do you can alter them to your own requirements later.

## proc add\_record

This is simply a general purpose add a record routine- it uses the cleardetails procedure to clear all the fields, and then enter\_record to fill in the details on the screen. More code- for example to check if the present record is already on the database should be added after enter\_record, and should set ok\$ to "n" to stop the record being added. There should really be a "display" command after the first "CLS" too.

## proc bye

This is simple a procedure that you can add-to and that is called when the program has finished.

## proc check\_label

Just checks a label to see how many blanks lines will have been missed out, and pads the label out with blank lines at the end...

## proc check\_record

This checks a record, and sets ok\$ to either "y" or "n" depending on the result- you could check any field- for example valid number of credit card digits, a suitable date, etc.. We have checked for all the address.

## proc choose;option\$

This is a general purpose routine that is passed a series of characters and returns one of them, depending on what key has been pressed, in key\$. eg- choose;"ymd" would only return a value in key\$ when either an upper or lower case "y, n, m or d was pressed. Your routine could then treat these as yes, no, maybe, definitely...

## proc cleardetails

This routine clears or initialises a record- for example you could fill in default date, membership no, or whatever a new record needs to have.

## proc confirm;text\$

This routine is passed a piece of text, and prints it out as a prompt on the prompt line, presently 17. (It would be better to set-up a variable in init\_vars called promptline, and replace the 17s with promptline.) The routine can only return "y" or "n", in ok\$ so the routine always appends "? (y/n)" to the text you pass to it. eg confirm;"Is this right"

## proc create\_file

This routine is called if the init\_file routine returns not found on opening the database. It sets-up the new database automatically. In the listing there is a bug. The procedure should have 2 more lines before the endproc. These should be- sub\_header;"Ordering File for Speed" order sname\$a

## proc delete\_record

This procedure is optional! We never allow records to be deleted on our customer database from a menu, it is far too easy for someone to make a mistake and delete a member's record! We type \*DELETE\* in the note field, (at the bottom,) and then a prompt comes up to ask whether you are SURE! This procedure allows you to enter in a name and town, and brings up some matching suggestions. Y to delete.

## proc del\_blank\_rec

This deletes any blank records that are sometimes added to your database. We have a better cure for the process that does this, and we will list that next issue. (It is also a major update to add\_record.)

## proc do\_all\_labels

At present this simply goes and prints labels for all addresses- it is easy to add some checking for only the ones you want to print. Example- (See note on do\_mail\_merge first...)

```
proc do_all_labels
first
while not eof 0
  if note$(len(note$))="l"
    do_label
    check_label
    let note$=upper(note$)
    update
  endif
  next
endwhile
endproc
*** It would be better to add a new
field rather than use the note$ field
```

```
proc do_alter
```

As there is no way (I know!) to clear an error except by to carry out an action without an error, then this routine calls procedure ok with error checking to clear the error, then the alter procedure. Any error during the alter will be stored in errnum().

```
proc do_error
```

This simple reports any error. You can have more complex error handling, or give long text explanations if you like, but an error is an error to us.

```
proc do_label
```

This simple prints out a label onto a suitable run of continuous labels. It prints each one below the last. (We have a long and complex routine to print them two across- the problem is eliminating blank lines.) This routine prints perfect labels, but uses only the left hand side of the label sheet- unless you use the l across continuous labels we supply!

```
proc do_line;text$
```

This is simply an lprint (print to a printer or file) that eliminates completely blank lines. (To send a blank line, just send on space- eg do\_line;" "). This procedure can also have a printer on/off switch on the main menu- ideal for test runs...

```
proc do_line;text$
```

```
if print$="ON"
```

```
if text$=""
```

```
lprint text$
```

```
endif
```

```
endif
```

```
endproc
```

Ideal!!!

```
proc do_mail_merge
```

At present this is very basic, but it allows you to edit it to your own requirements. At present it steps through all your records asking if you want to send a letter to the person concerned. It would be easier to add a new field, eg memberno\$ that you could use to maintain a record of who had heard what, and who needs a letter. You could then run through them automatically, replacing:-

```
confirm;"Print a letter"
```

```
if ok$="y"
```

```
letter
```

```
let ok$="n" (* DELETE ANYWAY *)
```

```
endif
```

```
with:-
```

```
if memberno$="l"
```

```
letter
```

```
endif
```

or using note\$ field for now, with:-

```
if note$(len(note$))="l"
```

```
letter
```

```
endif
```

This would allow you to send a letter to anyone whose record had a LOWER CASE "l" as the last letter note\$. The letters should be printed before the labels, as the amended label routing sets the character to UPPER case so the same person does not get another letter in the next mail-shot.

```
proc edit_record
```

This procedure displays a blank form, and then asks you to enter the name and town of the person whose record you wish to edit. It will not accept empty fields, but will accept a "?" in the town which is special, and will match any record with the same name, regardless of the town. You can step through possible matches until you find the one, or the end.

```
proc enter_match
```

This is the routine that actually reads in the name and town for match searches. If you use a different number of fields, or a fancy (sedit) screen layout, then you should adjust the position on the screen where it inputs both the name and the town.

```
proc enter_record
```

This routine is a complete "enter the record and check it a bit, but don't actually add it to the database yet" routine. It ties several of the other components together for use. It is also used to edit existing records as it allows the data to be amended. Adding a record is really only doing an alteration to a blank record...

```
proc header
```

Simply clears the screen, and prints up a title message. This saves lots of effort and duplicated lines.

```
proc init_files
```

This routine tries to open a \_dbf file, and to order it on surname.

```
proc init_vars
```

This routine is a nice tidy place to put all the setting-up of global variables- you don't want to go off wandering where zz\$ is set up do you? The variables used so far are:-

blank\$ - used to blank lines

dev1\$ - device 1, usually mdv1\_

dev2\$ - device 2, usually mdv2\_

margin - width of left margin

header\$ - holds heading text

```
proc letter
```

A blank procedure just so that the procedure if somehow used by mistake does not result in an error. Usually the procedure merged from a disk/mdv replaces this in actual operation.

```
proc main_choose
```

This routine is simply used to choose the options from main\_menu.

```
proc main_menu
```

Simply displays the menu options and the number of records on screen.

```
proc match_record
```

This procedure uses the details of name and town from enter\_match to find a series of records (if any) to display as possible matches with that required by the user. It returns ok\$ as "y" if one is accepted. It is up to the calling procedure to process.

#### proc merge\_letter

This tries to merge a program file from disk/mdv. The file should be a valid Archive procedure saved in the ".prg" (pure text) format, and should be a procedure called proc letter. NB The SuperBASIC listing last issue had a mistake—line 170 of that code should have read as follows:—

```
170 PRINT#5;"proc letter"
Error-trapping must be handled by the procedure that calls it. It could be used to merge other procedure too, but they'd have to be saved in a file called "doletter.prg" too of course.
```

#### proc message;text\$

This should be used for your help messages. They appear in green on our database, to highlight their purpose. You can have a single line of text at any time— it is used as below—

```
message;"This is a help message!"
To clear the message again:—
message;" "
```

It might be wise to add a variable called helpline to init\_vars and it should be used to replace the 15s.

#### proc prompt;text\$;option\$

This allows a complex prompt type situation to be handled with a single line of code. You pass some text and the keys that are valid selections.

```
prompt;"Press A,B, or D";"abd"
This would only return A, B, or D in key$. It uses procedure choose% too.
The confirm% procedure would be:—
proc confirm%;text$
prompt;text$,option$
let ok%=key$
end proc
```

(Why didn't I do that before...?) proc prompt% saves a lot of hassle!

#### proc secure\_file

This procedure makes a back-up of your data from drive 2 to drive 1. You must not remove either medium at any time, unless you WANT to lose both lots of data. A more elaborate back-up routine that keeps track of back-up numbers and dates will be listed in a later issue of "QL SUB".

One little enhancement that you might like to make now, but which will make backing-up take quite a bit longer is the addition of an export routine. That is where Archive outputs every field in every record as pure text—which can be imported into another computer or back into Archive using IMPORT. The advantage of export files is that in the event of losing data, they are a much safer form of backup.

#### proc secure\_file

```
header
sub_header;"Now Closing File"
close
sub_header;"Place Backup Media in "
+dev1$
wait_for_key
sub_header;"Now Making Back-Up"
kill dev2$+"personal_dbf" as dev1+
```

#### "personal\_dbf"

```
sub_header;"Place Export Media in "
+dev1$
wait_for_key
open dev2$+"personal_dbf"
export dev1$+"personal_exp"
close
end proc
```

That requires that you put the disk or mdv for the export file in drive 1 and that there is enough space on it! (Export files are generally longer.)

#### proc start

This puts Archive into no prompts mode with 64 characters per line, and opens the file— if it is not found, it uses create\_file to create one. It then displays the main menu, and goes into a loop until you decide to quit at which point it backs-up your file and finishes with a standard message. Start is called by Archive on using "run "filename"" to load a program.

#### proc sub\_header

This simply displays a heading, used to explain a current operation.

#### proc wait\_for\_key

This uses choose% to wait for the user to press space before going on.

The notes above should help you to work out how to enhance the program to your own specifications, but we have a few other notes that will make your program more attractive to use.

Where the existing program uses the standard (hideous) "fields listed down the left-hand side of the page" format, you can use a nice "form" type screen display. This is set-out with the SEDIT command, which is a source of some confusion, but is in fact very easy to use, and very good—

- 1 Write down a list of your fields
- 2 Type SEDIT
- 3 Clear the screen
- 4 Design a form with spaces left for the information you will type in.
- 5 When complete, move the cursor to the start of the first space that you have left for text and press F3 then U— you are asked for a field name. Type the name in full. Press ENTER. Press space to define the size of the area into which you can type. Press the down cursor if you want more than one line of text to enter data into. The maximum length of a field is 255.
- 6 Do this for the other fields. It is usually wise to ensure your fields in your database are in the same order as they are displayed on the screen.
- 7 When complete, SSAVE "personal\_scn"

To use it in your program, put an SLOAD "personal\_scn" in INIT\_FILES. Then replace the display commands with a SCREEN command in add\_record, delete\_record, do\_mail\_merge, and edit\_record. The use of DISPLAY will wipe out any special screen display.

# Thor<sup>VI</sup> Upgrade Wise?

The "Thor" was announced as outlined in the intro copy, as the ultimate upgrade for the QL, rather than as a totally new computer system. There was always the promise that in time, a new super fast QL compatible machine would be made available, and would follow on in the "Thor" tradition. We have now reached stage two, with the promised easy availability of the "Thor XVI" as a production machine, and the wide use of the "Thor" as a serious business machine, at least in the QL market.

## Thor On Load- Thanks CST!

With the offer of a loan of a "Thor 1" for a week or so from CST, (which lasted over two,) we have been able to put the old "Thor" through its paces. With the usual glowing review of the "Thor" again being produced by "QL World" one wonders whether the machine is as good as suggested, or whether the authors own "Thor"s and have shares in CST. The latter point, I am assured is not entirely correct. We set out to find out just whether or not the "Thor" can survive a week with us or can live up to our expectations.

The Thor 1 is not to be available as a production machine in future, as CST will, not surprisingly, be putting all their efforts into making the Thor 16 a success. The machine has sold in sufficient quantities, however, to mean that there will be large numbers of Thor 1s available from trade ins, and CST expect to offer good deals to both those wanting to upgrade from the Thor 1 to the Thor 16, and to those who want to upgrade from a QL to Thor.

## On Arrival- No Manual Sent

On arrival, the Thor had no manual. We found that the previous user had left the manual out after review, so we had a few days using the machine without any instructions. Quite a good test. We tried lots of QL software on it, and a lot of it ran ok. We also had a good time comparing the "Thor"s real windowing system with the much more sophisticated(?), "POINTER" by @jump.

When the manual did arrive, we were not much better off. It consists of a heavy softback desktop published work bearing many signs of the link between CST and Eldersoft that used to exist. The first few pages conflicted with the later pages, and quite a few of the features mentioned did not exist. No matter how hard we tried, we could not get the system control menu to appear, or to "activate" other keys.

The machine arrived in a slim cardboard box containing a specially designed(!) polystyrene box. We had to use our own monitor, as the choice is up to the customer, although CST can supply one. The box contained a Thor system unit, an IBM style keyboard, and a power lead. It certainly LOOKS professional, and setting it up is like setting up a slim, light and elegant PC compatible.

Plugging in is easy. All the usual QL connections are present on the back of the case, and we were therefore still able to use our standard QL leads and QL peripherals. All the sockets are still there with the exception of the power in socket, as the new kettle style plug for the Thor power supply replaces that, and powers up the internal power supply. You can also power a monitor from the system, but as we were using a TV/Monitor, and/or a Vision QL, we ignored that option.

There are also several new sockets on the back of the machine, and we were not long in exploring the options. The Thor has several extra features within its case. The machine has a parallel interface, (Centronics compatible,) that allows you to plug in nearly all printers without a serial to parallel converter, or any other special lead. A BBC lead will work, and as few shops will have heard of the Thor, choosing a BBC cable is the easiest connection.

There is also a mouse port, although on the review machine there was no mouse so we could not test it. CST had no mice available at the time, so we had to imagine that the effect would be similar to using an ICE mouse on a QL. Apparently on the Thor, the mouse can be set to simulate any other keys. There is no documentation on using a mouse. Although I am told there is a device driver- I could find no advice.

Also down the back is the keyboard interface for the IBM style keyboard. The keyboard itself is very attractive although looks are deceiving. The keys are very light in touch, and if you are used to the QL keyboard, you may find the touch too light. You will no doubt adjust eventually, but at first you find the touch very disconcerting.

I have used many PC style keyboards, and this one did not attract me any more than most. The main problem with this one for me was the positioning of the keys on the keyboard. Although it is supposed to be standard, I found that the caps lock key, located more or less where the QL alt key is, was particularly high, and easy to catch, MAKING MY TYPING PRONE to CAPITALS.

## IBM XT Keyboard- Nice Touch?

I am not a true touch typist, but I am still quite fast, and I found that the keyboard could still produce bounce or miss characters when I got up speed. That worried me, but I have to say that as the machine was a revue model, it will probably have had a hammering.

Incidentally, the Thor does now have "KEYROW" emulation, but it is far from perfect, which is hardly surprising. This "jargon" is relevant in that some programs inadvisedly scan the keyboard directly by the position of the key rather than by the code- as the Thor keyboard is totally different to a QL one, this makes response to such scans slow in being made. Sometimes they are missed altogether. This is usually only a problem for games/utilities.

The keyboard quality is certainly good in comparison with the normal QL, and a comparison with the Schoen IBM style keyboard that is very similar, made me feel that the CST unit is well made. I understand that the new CST "Thor 16" will be supplied with a choice of keyboards and that a larger keyboard with more keys will also be available. This will overcome the annoying feature of the present one, and the Schoen, which is that although the numeric keypad is available for faster data entry, you cannot use it in Abacus etc., because if you do, you cannot use the cursors. That makes data entry rather tedious.

## QL Video Output As Expected

The second item that you notice is the quality of the video display and the monitor that is supplied on a system. As the Thor uses the standard QL video output, the quality on a TV is poor, but the quality on a suitable monitor, excellent. The same care needs to be taken when choosing a monitor for the Thor as it still uses a wide scan 85 column display unsuitable for many. As we have already mentioned, we did not get the chance to test any supplied monitors, but as CST usually supply Phillips or Microvitec the quality can be assumed to be very good indeed.

## Storage- Obvious Difference!

Of course, the obvious difference to first time users between the Thor and the QL is that the Thor has no built-in microdrives, and no socket for them as standard. (You can have one as an option at extra cost when you order- the socket allows you to plug-in the ZX Microdrives as used on the Spectrum although connecting one is cumbersome.

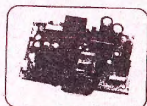
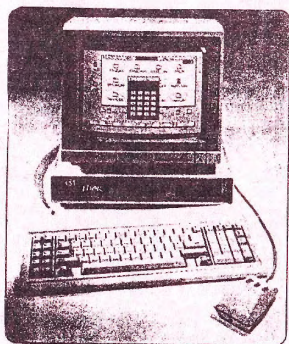
The problem with having no microdrives is that some companies still only offer software on cartridge with protection.

## QL Software Incompatibility?

You can transfer most software from microdrive to disk, but unfortunately there is still a large amount that is impossible to transfer as it checks to see if there is the original cartridge in either the left or right drive. In many cases, even if an external "ZX" drive is fitted, to the Thor, you can still not use the program as it checks only the right hand microdrive- so you need TWO microdrives, or a clever fix.

The other problem, not related to the problem of software only supplied on microdrive, but the cause of just as much difficulty is compatibility with the "Thor" real windowing system. The system is linked in during start-up, so you will have difficulty running some software that expects to work in the background, or tries to grab the system for its own purposes. Multi-tasking managers are incompatible- but of course they should be unnecessary as the Thor has its own system built-in, which for QL users is similar to the Qjump POINTER windowing system. It is this resident system that uses up a little of the RAM for system variables and stops programs that reduce the RAM available, to 128k, for badly behaved programs to run, from doing so. A fix is now, I am told, available from CST.

The Thor system includes an ICE front end as standard on disk- unfortunately the ICE software supplied won't work with most of the existing ICE system software which seems quite ridiculous.



The disk drives themselves sit one above the other on the extreme right of the system unit. The middle panel is usually masked off with a black metal panel, but if you can afford one, you can have a Rodime hard disk unit fitted, in which case the drive occupies this otherwise unused space. (All drives sound noisy, but this is probably because the case -echos-.)

## System/2 Offers Microdrives

It is a pity that CST couldn't have developed a similar idea to Spem on the System/2 kit, which offers the option of twin microdrives. The option would have been good for less affluent Thor owners- and have cured problems outlined above caused by "protection".

Although you have the option of adding a hard disk (winchester) later if you buy the standard machine, there is no option to add a 5.25" disk drive, and there is no socket for extra drives. This seems to us to be poor expansion- apparently the same is true of the new Thor 16. On both, there is some option of plugging in a QDisc unit to add any other drives but that uses up the only expansion port that you get on a Thor. There's another grumble- you still get just the one real expansion port, but of course you have more hardware that you normally need to add, built-in. The RAM used is very fast indeed, and this contributes to a very good speed increase over a standard QL, but can also be achieved by RAM Plus on a QL.

There is also a battery backed real-time clock built in and this helps you to keep track of your files, as when set, it records the date and time that a file was created or copied- useful.

The Thor includes ROM sockets for 128k ROM, and there are several EPROMs now available including "Speedscreen", and Intram. More are available 3rd party. Fitting is done by CST or by the user.

## Thor O/S is based on QDOS

The built-in ROM that is at the heart of the Thors operating system is JS, with 64k of extras for toolkit etc.. The hard disk has a device driver that offers directories- without these you would find the number of files on 20MB of hard disk rather hard to manage.

The extra commands for job control and file handling are (more or less) the same as offered from Qjump Toolkit 2, although there are some useful extras. It is hard to say what version of ROM will be used on the present Thors. The one we had was apparently not recent, although the Thor was a revised model!

## Exchange- Worth Examination?

We will look at Psion's Exchange on the QL in more detail in another issue and will compare it with the cut-down version available for PCs as PC Four. It cures most of the Guill problems, and the fact that it multi-tasks in a sensible way without grabbing all the memory makes it much more useful. It also has 3D graphs on Easet, and some shortcomings in Archive are overcome.

## Credibility Req'd for Business

For "presentation" purposes, all Thors look far more professional- clearly credibility is often important. For business users, a "Thor" or the new "Thor 16" certainly seems to make good sense. For most personal users the clear advantages in having a ready to go system are considerable, but may not be sufficient to merit the higher price. It is not an easy decision to make if the choice is staying with the QL, and expanding it, or making the jump to a new, but compatible machine.

## No Rose Tinted Glasses Used

There are a few clouds on the horizon for CST Thor owners, however. CST will be ceasing production of the "Thor" 1, and will be producing only the Thor 16. There will, according to CST, be a considerable number of users wanting to upgrade from the ordinary Thor to the 16, and the machines that are traded in will be reconditioned, and sold again to other customers. There will clearly be a gulf between the QL and a "Thor 16". Limited supplies of Thor 1s probably won't satisfy demand for a middle end "Thor" for business.

## High Price to Pay for Power

The Thor, and the Thor 16 still look very uncompetitively priced to us. The QL has unique advantages, and the Thor series enhance these features. Prices on the Thor are not really likely to be cut drastically because of the small number of sales, and the small range of dealers in what is really a very small specialist business market.

Businessmen may well look at the Thor, and think that in comparison it looks poor value among non-IBM clones. Of course in comparison with something like popular IBM clones such as the Amstrad PCs, that start at £399+VAT, what you get isn't very much at first sight- no monitor is included, and although you get a mouse and the Psion Exchange suite, together with a disk of utilities, that seems about it. CST is a small company, still working from home and manufacturing in the kitchen!

## Final Verdict- Mixed Feelings!

The final verdict of course is whether I would like to own a CST "Thor". In SUB's case I have to say that I would, but that I would not swap one for our present expanded QL systems. I like the sure knowledge on an expanded QL that I am always fully compatible with new developments, and software, and that although I have a modular system, I am always free to upgrade my system as I wish without limits on choice.

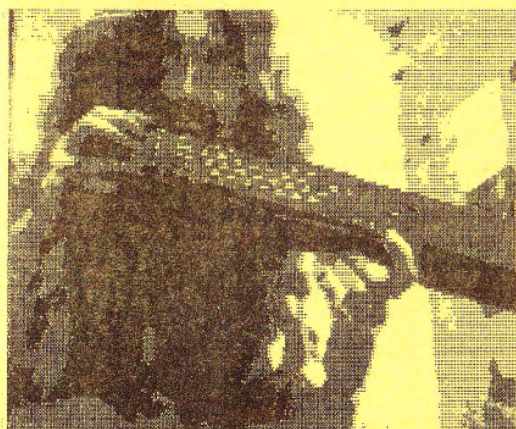


# MOVING TARGET!

**A LITTLE COMPETITION NEVER GOES AMISS. DON'T MISS THIS!**

We hope that this month, both the prize and the competition will be easy to understand. The prize is certainly easy to use, and we hope that you will make the effort to win it. If you already own the prize, or you don't want it, then we are even thoughtful enough to let you choose something else to the same value!

All you have to do is think of a suitable caption for the image shown below. (It is a result from the Spem Video Digitiser unit.) That will not be too technical or too much trouble for anyone!



**THAT ISN'T  
WHAT I MEANT  
WHEN I ASKED  
IF YOU WANT  
A MEGABYTE!**

*You MUST be able to do better. Let's find out NOW!*

If we like your caption best, then you win QLiberator Budget !!!  
It is as simple as that. QLiberator Budget normally costs £29.95.

If you have any ideas for future competitions, then please tell us! We need a good response to this competition to keep it featured. I will have difficulty in convincing the sales dept. that giving away our stock is a good idea if only a handful of people respond...

*Just send your competition caption to MOVING TARGET at our usual address please.*

**REPLY BEFORE ISSUE 4 TO ENTER.**

# BENEFITS IN STORE

THE SPECIAL DEALS FOR READERS THAT WE HAVE ARRANGED

Once again, we are pleased to be able to draw your attention to a selection of products that we are able to offer to users at special prices. Once again, the range of products listed on this page is only a tiny selection of those on our price list, a copy of which you should have received with this magazine. If for some reason you have not got one, (perhaps if you've mislaid it, or given it to a friend,) then please give us a ring, and we will make sure that you get another copy quickly.

*We will be happy to include any of your friends or colleagues on our maillist.*

This month, we can offer a number of the items reviewed this issue, at special prices to members only. We have them in stock *now*, so there are no problems with lengthy availability either!

*These special deals are only available until Issue 3 is available to readers.*

The Miracle QL Modem is on offer at £45.00, (RRP is £49.95,) and the Qualsoft "QL Terminal" can also be bundled with it for £71.00. (The "QL Terminal" was reviewed last month.) We have got a special deal arranged on the Inkwell Deluxe and Cuewell packages in the form of a special bundle from A.C.E., a group consisting of three Bristol computer companies. If you like the look of the software from GAP, then give us a ring, and we'll let you know what special saving we have arranged. The *SPY* is normally £14.95, but we offer it to members at £13.50.

*As you may have noticed, we can also offer special prices on the Thor XVI's.*

Of course the prices on the products above are only a small sample specially selected from the pricelist. We would just like to remind you that *our* prices include VAT and Postage etc.. Some of you have phoned us up to tell us that you can buy a particular product cheaper elsewhere, and asked us if we'll beat it by cutting our price. *Sorry, NO.* Our prices are as low as we can go. Infact, we would like to remind you that you'll save money by ordering by cheque instead of ACCESS/VISA. (We cannot offer the same member savings on such orders.)

*For full details of the difference in savings to members see our pricelist.*

Remember, although we are QL specialists, we can supply you with hardware and software for other machines, computer and office supplies, some computer books, and individual attention...

*If you have a PC at work, then we can supply your PC supplies too of course.*

# SORRY CASH WITH ORDER ONLY

# READER EXCHANGE.

A CHANCE FOR YOU TO ADVERTISE YOUR SALES AND WANTS.

For the terms and conditions related to advertising on this page, you should refer to your introductory copy of this magazine. It was designed to give you all the information about features, so we would have more space for the interesting reading you want.

*Last month*, we suggested that unless we actually received some correspondence for this page, it would have to go eventually. I am sorry to say that unless things pick up, it will do so. As you can see, the amount of interest in user to user contact, or sales and wants does not really justify the space used. Please make use of this page. It is your page, for your own (legal) purposes.

We now have a central software and hardware exchange set-up. If you have something to sell, or you want to buy something please send us two first class stamps, and we will put you on the list. The first is to advise you when something of interest becomes available through the exchange. The second is to advise anyone who may wish to remain anonymous, of an offer that you may wish to make, or accept. This system is a much more efficient method of putting people with sales and wants in contact. We will advise if a requirement becomes available, and we will NOT take a cut of sales.

QUANTA's now under new control. The new contact is now Phil Borman, 15, Grosvenor Crescent, Grimsby, South Humberside, DN32 0QJ. The club has had a shake-up, and it is now run more along formal lines, with new officials elected by the members.

There's been another QL club born. Called the "QL Friendly Club", it is getting some coverage from QL World, although the organiser has not been in contact with yet. The address is: W.G. Johns, QL Friendly Group, 12a Wenauilt, Dolegellau, GWYNEDD, North Wales, LL40 1PW. The idea is a club for novices to exchange experiences.

## Use this section for QL chatter!

Remember, too, that if you have any QL peripherals that you no longer use, or you are looking for something obscure, then let us know, and maybe someone will get in touch with you. Just to remind anyone who might have thought of it, we will not allow any adverts for pirated software, or swapping copies of games.

It seems that although most users are serious in their useage of the QL, there is an interest in hints and tips, including ones for games, and adventures. If you have some, please let us all.

Dear Reader Exchange,  
I've written in to help readers who are stuck on Alien Hijack. I Get stool from room in which two red aliens are.  
2 Then go to room where the barrels are.  
3 To reach the key put a barrel on top of the stool, and get a barrel, and put it on the other barrel and stool and then climb on the double barrels.  
I hope that this helps someone.  
By Peter Smith. (More to Follow.)

We are still looking for a copy of CP/M 68k that was written for the QL by Quest in the early days! We don't have to be able to buy it, just able to borrow it for a while so that we can investigate it for another issue. We have successfully borrowed a copy of GST 68k 0/2S. Thanks to Mr. Miller for that. Frankly it looks as though Sinclair was wise to choose QDOS in preference to it. It does have some benefits, but not enough. We will be doing an article for a future issue.

SEND ADVERTS TO READER EXCHANGE NOW!

# Adventurous Goings On with QL

This is the first in what will we hope be a regular series of articles about adventures, on the QL. I shall also be covering some war-games, strategy, and simulations. (Ed, SUB will be too.)

To begin with let me introduce myself. My name is Richard Alexander, no silly pseudonyms for me, and I've had a QL for about 3 years. My hardware set-up is an AH QL, with 512K memory and 2 720K disk drives. I also have an unexpanded JS QL. I currently edit and produce QL Adventurers' Forum using my trading name "CCH Services". More details in my advert this month...

I shall try to keep to the same format for each article for QL SUB, with a round-up of news on the Adventure scene, a brief look at new products and finally some hints and tips for those stuck in Adventures. In common with similar columns I'd like to invite readers to send in their problems so that I can either publish the answers (cryptically or explicitly depending on the type of problem) or pass them on to other readers for their help. If you have completed an adventure and would like to pass on your maps or solutions please send them in. I may have played most of the QL adventures but haven't solved them all by a long way. (Ed, Has anyone?)

What's new on the QL Adventure scene? Well, there have been hold ups with both Imagine and APT from Shadow Games. I'm not party to full details but understand that attempts are being made to get these made available as soon as possible one way or another.

Secondly, "PCBS" have released "The Talisman", a massive dungeons game. Alas they seem also to have had difficulties as my recent letters to them have been returned marked "Gone Away". Any elucidation on these situations would be much appreciated.

And now for the really good news! TK Computerware have released Mert's new adventure "The Prawn", and it's a cracker!!! If you've enjoyed Funfear or Horrorday by Mert you'll love this one. Produced like the other two, with the aid of Gilsoft's Quill, this adventure is in three parts, and features a splendid spoof on "The Pawn". Quite how much of the humour will be lost of those people who haven't played "The Pawn", I'm not sure. But never fear, Mert has produced an excellent adventure in its own right. Does anyone know whether Gilsoft are still promoting and developing "The Quill" on the QL? (Ed, Yes, it is- we have it in stock.)

On the wargame/simulation front, there have been further releases from Complex Data Systems in their "Grand-Master of Eternity" series, "Warlock" and "Piracy". Both are available in 128K and expanded versions. Not having seen either I can't comment on them. Also the US software house, Quantum Computing have released "Gridland Holocaust" allowing one to enact World War Three in the privacy of your own home. How thoughtful!!! Again no review as I haven't seen a copy yet.

Finally we come to the hints and tips section. And my first problem is: which games to cover? Well, probably the best known QL Adventure is "The Pawn" and this has had a good many (and many good) people stumped for a long time. So, here's some help:

Can't get past the snowman?  
A few colours suitably mixed will stop you being stumped.

Can't get into the lift?  
Try tobogganing!

A boulder blocking the way?  
Two gardening implements can solve this knotty question. (Or you could take the short-cut via the guru!!!)

Keep getting eaten by the dragon?  
A little light in dim corners will reveal an alternative dinner for the beast, if prompted.

Can't get past the porter?  
A little drink and a lot of patience will do the trick.

Molten river blocking the way?  
Try losing your temper on a nearby wall! (Ed, Does that relieve stress?)

A way down to Hades required?  
The answer lies on your feet if you're in a tearing hurry!!!

Devil got your tounge?  
Well who set up your quest, and what do you want to be rid of? Lucifer can spread some light on the quest.

Lost in the maze?  
Exit quick! (Or subscribe to QL SUB!)

What's it all about?  
You'll have to ask the flying magician

Still stuck?  
Write to this column. "The Pawn" is one adventure I have completed!!!

(Ed, Well done Richard, keep it up. We will be pleased to hear from anyone else who has an idea for a QL column, or would like to write some articles.)

# ON RECORD, "GAP"

This month we interview Peter Chambers, boss of Gap Software.

Ed, Why did you first buy a QL?

I liked the specification even when it was first announced but like a lot of people, I was put off by what the journals wrote about it during the first few months. Then, in late 1985, Personal Computer World ran a re-review concluding that it was actually pretty good. I wanted a cheap computer that ran standard languages like Pascal and C, and that had an RS232 for porting the source around. So I bought a QL in early 1986. Oddly enough, I never really got round to the porting idea because I found that the QL was a damned good computer in it's own right.

Ed, Why did you support the QL?

It is a good computer. Sinclair came up with something at least four years ahead of it's time, which is, I suppose, why it has never really taken off. "All" it needed was marketing. The QL is really good, and can be a genuine help to the smaller businesses. I'd like to help that along too in the future. (Ed, that is a growth area.)

Ed, Why support the QL instead of the ubiquitous IBM clones?

The QL allows you to do things that are either impossible or, at best, very difficult to implement on an IBM clone. This is mainly due to multi-tasking, that allows users to work the way they think. I believe that computers should fit in with, or extend your work systems. It should not be the case that a business has to redesign their system around a computer, any more than around any other piece of office equipment. The QL can come much closer to that ideal than any IBM clone can.

Ed, Other than programming what do you use your QL & Thor for?

I use Quill a lot. It's slow in comparison with some of the alternatives, but I don't have the time to learn big manuals. I use Archive with "Cusfile"

for my database records. "Front Page Extra 3" for adverts, our literature and packing and our newsletter. Sign Designer is used for many things including a starting point for the hi-res character sets in FPx3. I use Eye-Q for any complex artwork. I use Abacus for our cashflow forecast and financial analysis of various kinds. I wrote a short utility for transferring textfiles off the Z88 to the QL or Thors. The Z88 is convenient for writing things, but Quill's better for doing proofreading.

Ed, How do you see the QL being used in future? What will yours be doing do you think, Peter?

My QL will be used for some time yet. I am doing a fair bit of work now on networking and even multi-user applications, and I expect that the QL/Thor will have this kind of software soon. After all, that is where the 'main' market is going.

I hope that people who have a QL will realise how good it is for small business especially when fully expanded and used with GRAM. I will try to do my bit by producing more business applications and utilities.

Ed. What would you like to do that you can't at the moment?

Fly.

Ed, What, if any, do you think are the shortcomings of the QL, and the QL market at present?

The biggest single problem with the QL is the screen. It is too slow for fast graphics, if that doesn't sound too silly! The reason it is slow is partly that it does a lot, looking after all those windows and channels, and partly because it uses floats for all parameters. It's the QL's trade-off between real sophistication and speed.

I also wish there was some error-trapping on opening your network channels. You can waste lot's of time waiting for full control to come back if station 9 or whatever is not connected to the net. (Ed, Gap have now written "Office manager" that

# by Peter Chambers

controls things for a "Thor" network and is a "Front End".)

The main shortcoming with the market is that people don't realise how good the QL is for applications. It seems that the bulk of software available is programming utilities, and file handlers- people don't want them- but they still appear...

Ed, Who buy your products?

Users. People who see their computer as a means to an end in their work, i.e. to do the accounts, write a letter or cost a job. They are the REAL users, and like "yer av'rage" Aussie, don't give a XXXX about the mechanics of QL windows, channels or even RI(?) stacks.

Ed, How do you see the future of the QL and "Thor" markets?

It is unfortunate that the QL is no longer manufactured. From that point of view, it cannot be seen as an expanding market. It is therefore inevitable that software houses will gradually withdraw their support. For as long as it stays economically viable, I will support the QL, and Thor. I believe that that will be for some time yet. You keep needing it and I'll keep supporting it! (Ed, like us!)

Ed, You have a new programs in the pipeline- is it for QLs?

Yes and no. I am writing for the CST "Thor XVI" now, but I'm also trying my best to ensure full compatibility with the QL. There will come some point when this becomes impossible, but I will certainly do my best. We are not a nation of programmers- most people quite rightly see their computer as a tool. I will therefore continue to write more applications.

There are many things I would like to do. Two of them are training (not necessarily for education) and analysis. There is a fortune spent on training in industry. The 'tireless teacher' could help lots more than it does now. The 'teacher' will be a QL or Thor. (Ed, is that a hint about a new prog?)

Ed, Is there anything I've not asked, or anything that you want to say before we "close"?

Yes. All you with QL's and "Thors"- you can run virtually any two multi-tasking progs in 640K. (Ed, Many more I hope!)

You all have networking and even multi-user facilities built in. You have in either machine one of the very most sophisticated (and powerful,) cost-effective operating systems now available for a microcomputer, anywhere.

In spite of this fact, all I keep hearing about is "OS/2". If, and when, it is finally available in all it's glory, you will be able to run ONE multi-tasking program in 2Mb, (that's MEGABYTES,) unless they change it drastically from how it stands at present. If what has been written about it so far is correct, it will run your 'pc compatible' software, but in doing so, it will automatically "downgrade" itself from around £4000-worth of OS/2 to just £1200- worth of AT.

This, I gather is because 'compatible' software makes all sorts of direct system calls, and we who have QL's and Thors know what THAT does, don't we? At best it makes things rather incompatible- at worst it can cause major system crashes.

The CST "Thor XVI" is available now. Why wait for OS/2 when you can have a British version that is not only available now, but has system software that can actually multitask efficiently, and is available right now...

If you already have one, you don't know how lucky you are. And if you don't already have one, think what you will have to pay for using OS/2.

## Conclusion.

Ed, Yes, I think that you have put your case for QL computing rather well, and I hope that all your comments will promote a "QL SUB" discussion- we need some comment from users too!

# Backspace-QLs

QL computers have now been available in some form for over four years here. Is it time to take another look at the specification, and decide on another minimum standard machine for which to write software, and provide support?

From our membership figures, although a small sample at present, it is clear that many people now own an expanded QL with more memory, usually 512k or 768k extra, disc drives, usually 3.5", and in most cases, printer. Of those people who do not own expansions many have expressed their desire to do so. How many people own larger QL systems overall is hard to say - the people who contact us are the "committed" users.

Is it about time to assume that anyone doing any serious work on their QL will already have invested in extra hardware, or be about to do so? Should an expanded QL or "Thor" therefore be considered the minimum standard? Games and entertainment programs could still be supplied on microdrive for users of unexpanded machines. This would allow authors to produce much more powerful programs, not restricted by supporting machines with only a standard 128k and twin microdrives. Let us create a few "stereotypes" for this exercise...

1) The games player, with a basic QL and a colour portable. Uses include arcade games, adventure games, leisure games, and basic programming to write more games. Invested in one joystick, but nothing else usually.

2) The hobbyist, with a basic QL using it with their television. Uses include writing letters, (limited by the facilities of using the Serial 8056 printer supplied free with the QL by Dixons), keeping a collection on Archive, and a little programming in SuperBASIC. Also some leisurely games such as Scrabble, Chess, Card games.

3) The tentative enthusiast, with a QL and expanded memory. Usually uses a cheap printer, and a mono monitor. The urge to upgrade to floppy disc drives and other "wonders" is strong, but is held in check by the fear of investing in a "dead" computer when friends and colleagues have newer machines.

4) The enthusiast, with a monitor, (usually colour,) a printer, expanded memory, and disc drives. Future plans include almost everything available. Main uses are (supposedly) programming and the four business applications. Most newer programs are bought in the hope that they will offer something. Hackers have similar QL systems too, but their uses are much more diverse.

5) The small businessman with a bigger system, and a heavy investment. Often has a Thor, but usually an expanded QL with everything "recommended". Nervous of further investment when everyone is buying IBM compatibles, but attracted by the new "Thor 16" systems. Main use is for word-processing, and databases, spreadsheets, and often for accounts - generally a capable productivity tool.

6) The business "system" user, with a "Thor", or even a network of QLs. Main uses are as for the small businessman, but the machine may also be used for special applications, from design, or CAD, to special corporate uses. The company policy is often IBM, but the office thrives on QL computing, and a continued investment is required for maximum productivity to be achieved.

Please don't recognise yourself, and think immediately that I was thinking of you in particular when I wrote it. Of course, these descriptions were meant to be very generalised comment.

The point is that soon, with the new Thor 16 now being available, and the new expansions promised, such as the Sandy Megaboard, and the ABC MegaRAM, programmers will have to take account of the needs of power hungry users, with Thor 16 users using up to 6.5mb of memory, QL users with up to 3mb in a standard QL, or 4mb in a case, QL and Thor 1 users with 640k, various QL memory sizes up to 512k, and the group of QL users with only a basic 128k.

Our belief is that programmers should set themselves two standards to work with. A 128k standard machine and 512k expanded machines using disk drives.

This could give everyone the best deal in our opinion - software designed for the two prevailing standards rather than a whole range of confusing ones. The key to success in future is that programs should be written to obey the rules set - they should be written to multi-task, to allow users the best performance. Programs which need to be booted from scratch should not be supported. On a machine with 6.5mb, the last thing you want to do is press RESET. You should be able to swap between jobs, and not worry about toolkits or "resident improvements".

Programs should expect either 128k, or at least 512k, but be capable of using more when available. This way, you are paying for a program that can make fuller use of resources, and does not cut corners anywhere to suit a more limited system. Few people would want to run a program using 3mb, but a machine with five or six full 512k applications would be very appealing!

This will not happen unless software is well behaved, and multi-tasks. If you campaign now, it may just happen!

# STOP PRESS!

INFORMATION ABOUT THE LATEST DEVELOPMENTS OF S.U.B.

QL SUB REPAIRS  
INCLUDING YEAR  
GUARANTEE ONLY  
£33 TO MEMBERS  
£38 NON MEMBER

ASK FOR DETAILS. CST "THORS"  
CAN BE REPAIRED TOO. PRICING  
DEPENDS ON NATURE OF FAULT...

*BAD NEWS FOR CST "THOR".*

*CST have apparently moved to Denmark. Their operations in the UK are being handled by PDGL. (Tel. 021 200 2313)*

*Rumours are flying around about legal action, family or trade feuds, and much more.*

*The facts don't seem to be popular at present, so we'll reserve judgement until we get some positive statements.*

*If you're worried about lack of support, don't worry, we have never put great store*

**REMEMBER, WE ARE EASY TO CALL!**

ENQUIRIES 9AM..5PM, MON TO FRI, HELPLINE 1PM..8PM SUN TO THU.  
TELEPHONE 0388 450610 / 450658, ANSWERPHONE ON 0388 773737.  
OTHER METHODS ARE: FAX: 0388 609845, PRESTEL NBX: 219998590,

TELEX: 934999, TXLINK G, QUOTING REFERENCE NO: 219998590.

**S.U.B., PO BOX 3, SHILDON, DL4 2LW**

## WHAT DO YOU WANT FROM US?

A few people have asked us if they can buy other computer products from us. Well, within reason yes- we can supply you with CBM Amiga and Atari ST equipment if you need it, but we will also tell you what is wrong with it, and what you can do to overcome many problems you may encounter. We will even offer you some trade-in on redundant QL products, but we do not encourage you to sell up and quit the QL- we are QL specialists, and you will not find us advertising in any of the Amiga or ST magazines.

## PC FOUR TOO!

Of course we can also supply the PC versions of Quill, Abacus, Archive and Easel, "PC Four", and at one of the best prices. (The best in the QL market.) We have installed three PC systems using this software recently. If you have to use an IBM PC clone at work, then the PC Four system really is very good, and even allows you to transfer files from your QL to your PC using suitable hardware/software.

If you need anything else then let us know. We are dealers, as you require, for most popular products. We will of course put the QL and all compatibles first because we specialise in them.

*on just CST. We will support you regardless of anything that happens to future QLs.*